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MEMOIRS
OF THE
MUSEUM OF COMPARATIVE ZOÖLOGY
AT
HARVARD COLLEGE.

EIGHTY-THREE PLATES TO ACCOMPANY.

VOLUMES XX. AND XXI.

CAMBRIDGE, U.S.A.
PRINTED FOR THE MUSEUM.
1897.

UNIVERSITY PRESS :
JOHN WILSON AND SON, CAMBRIDGE, U. S. A.

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FRANK SPRINGER.

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TOGETHER WITH THE ACCOMPANYING EXPLANATION.

Memoirs of the Museum of Comparative Zoölogy

AT HARVARD COLLEGE.

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THE NORTH AMERICAN
CRINOIDEA CAMERATA.

BY CHARLES WACHSMUTH AND FRANK SPRINGER.

EIGHTY-THREE PLATES.

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(All specimens are in the collection of Wachsmuth and Springer.)

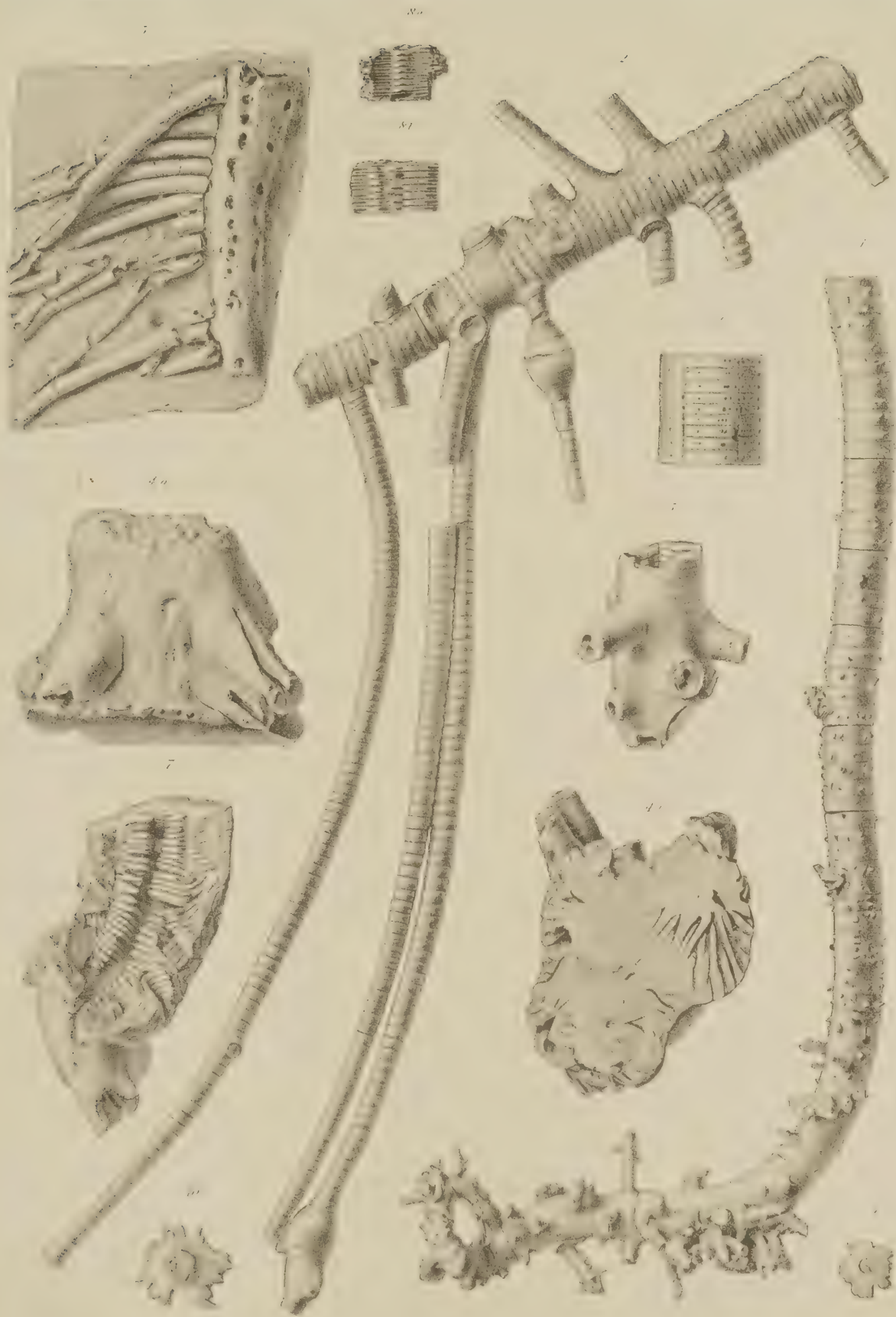


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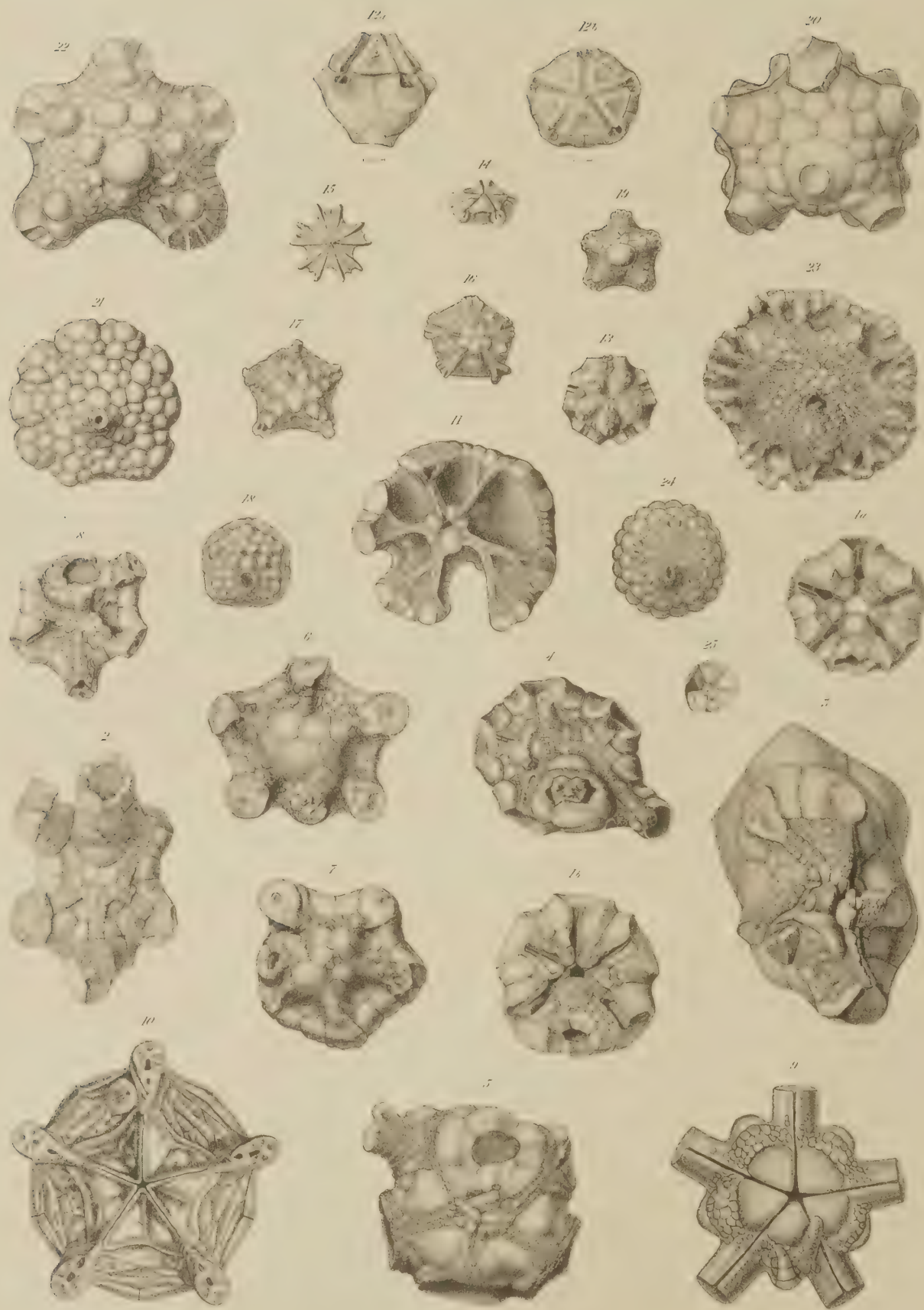


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(All specimens are in the collection of Wachsmuth and Springer, except that of Fig. 6, which is in the collection of Mr. R. R. Rowley.)

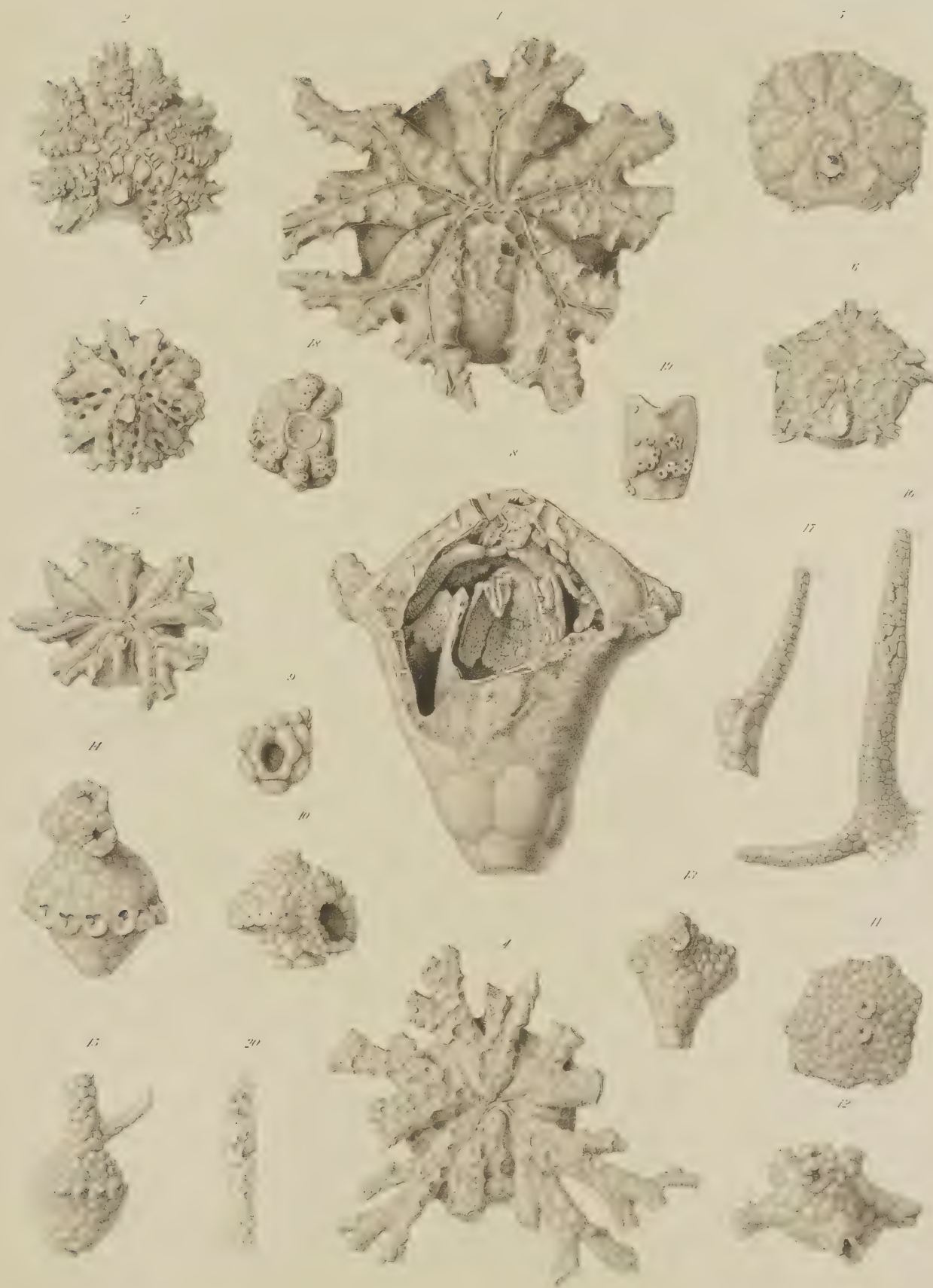


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(All specimens are in the collection of Wachsmuth and Springer, except those of Figs. 10, 11, and 15, which are in the Museum of Comparative Zoölogy.)





PLATE VI.

(Figs. 1 to 12 are represented to show the orientation of the stem and axial canal among Neozoic Crinoids; figs. 13 to 20 the close affinities between the Ichthyocrinidæ and Comatulæ.)

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(All specimens are in the collection of Wachsmuth and Springer.)	



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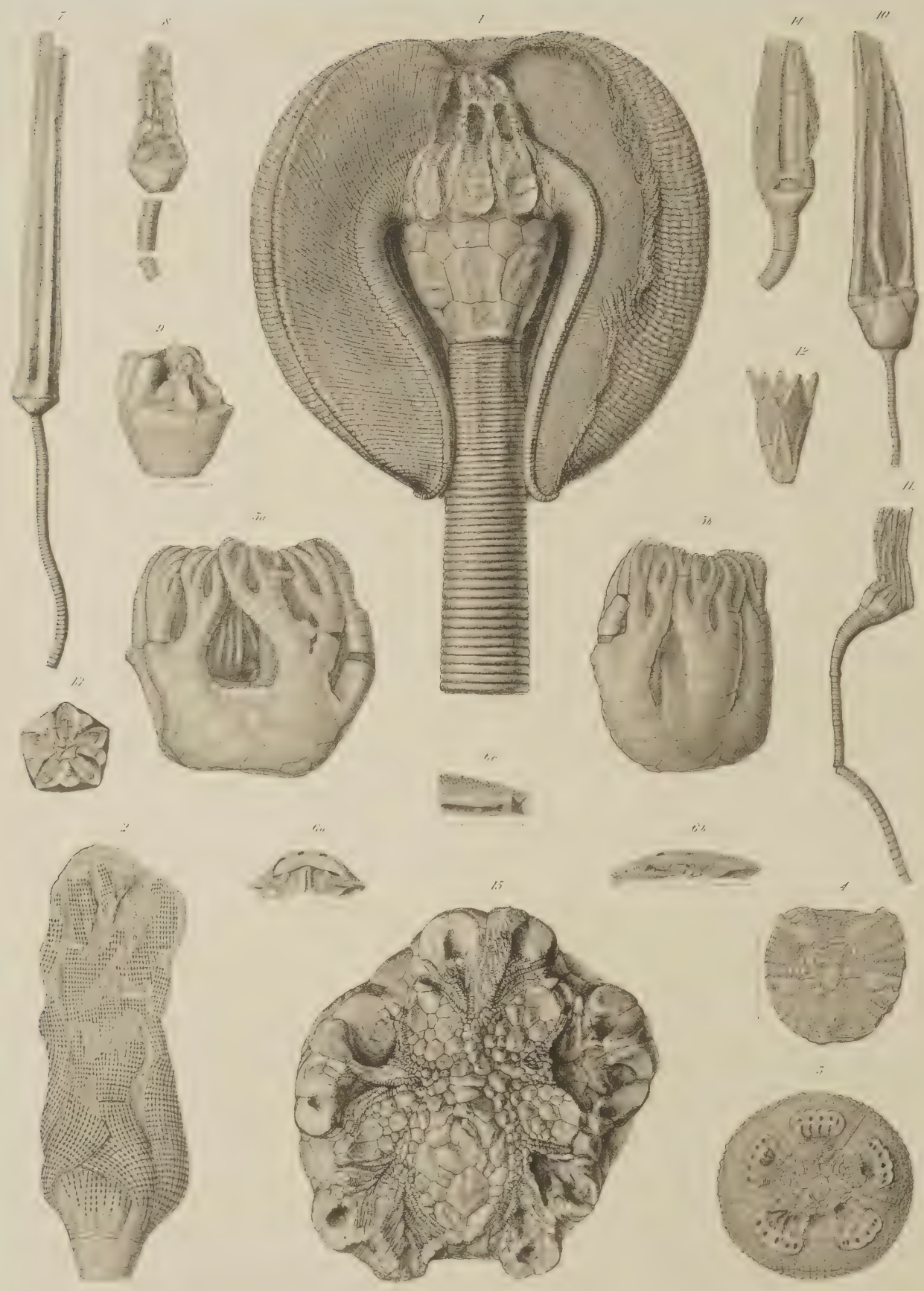


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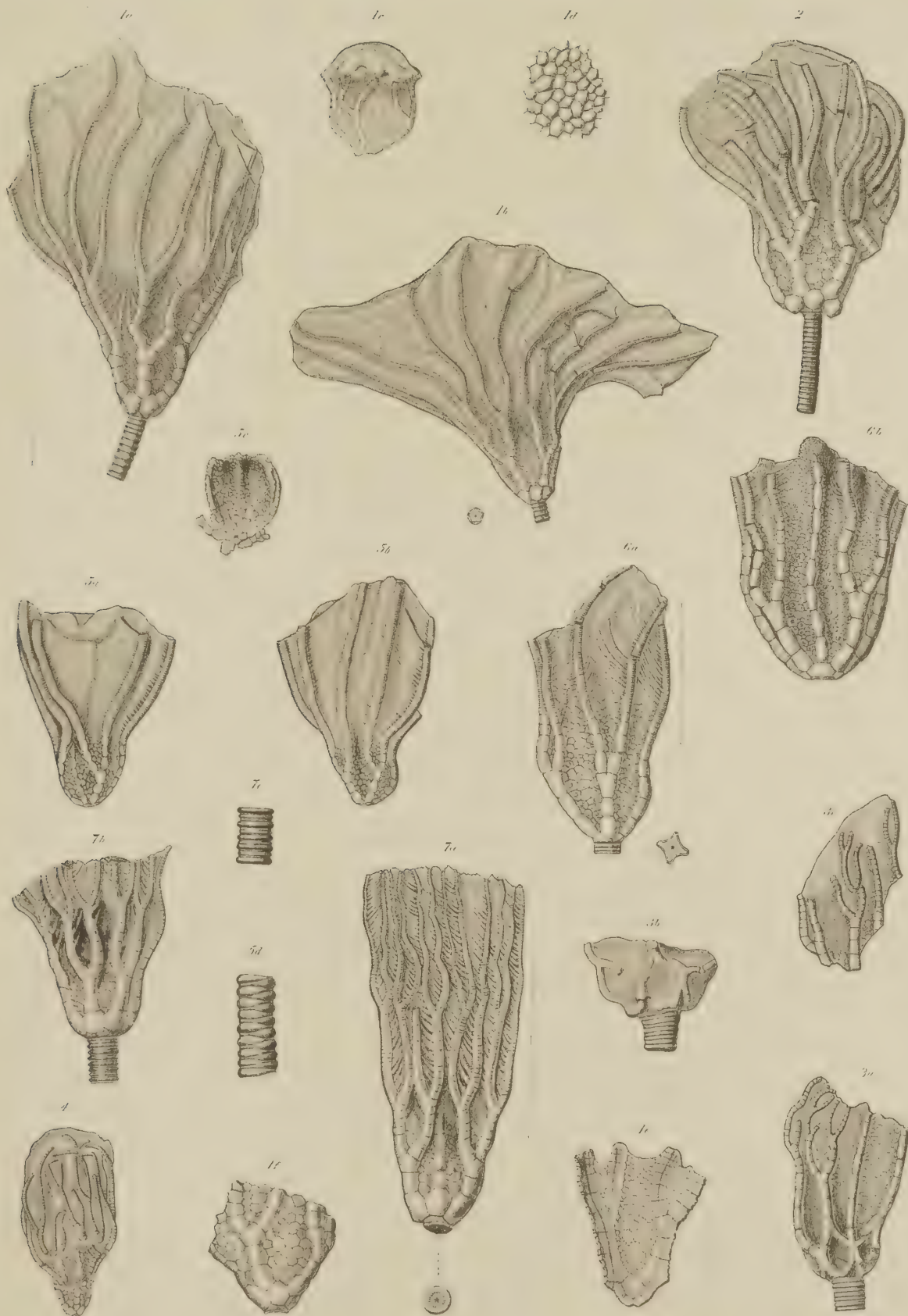


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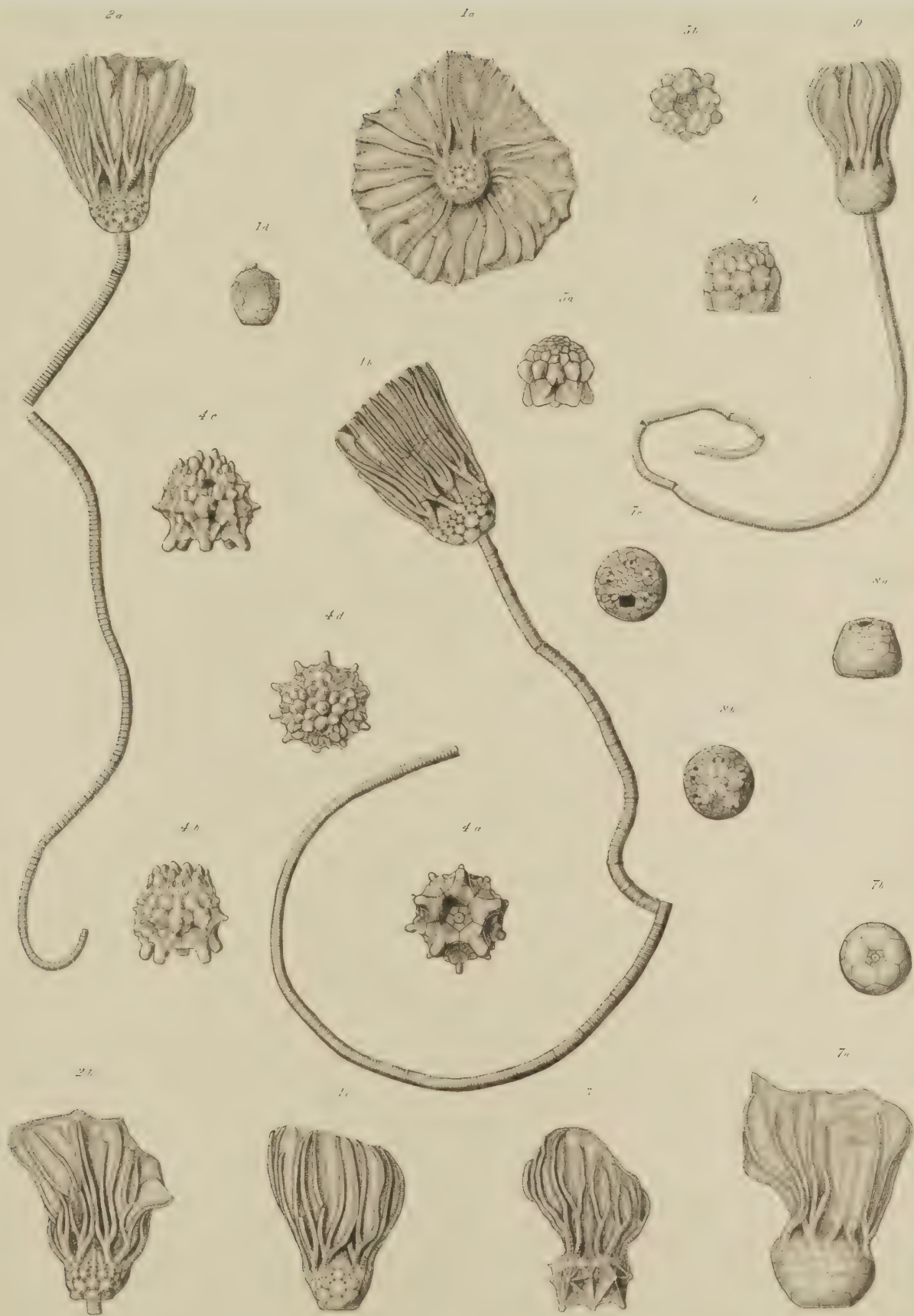


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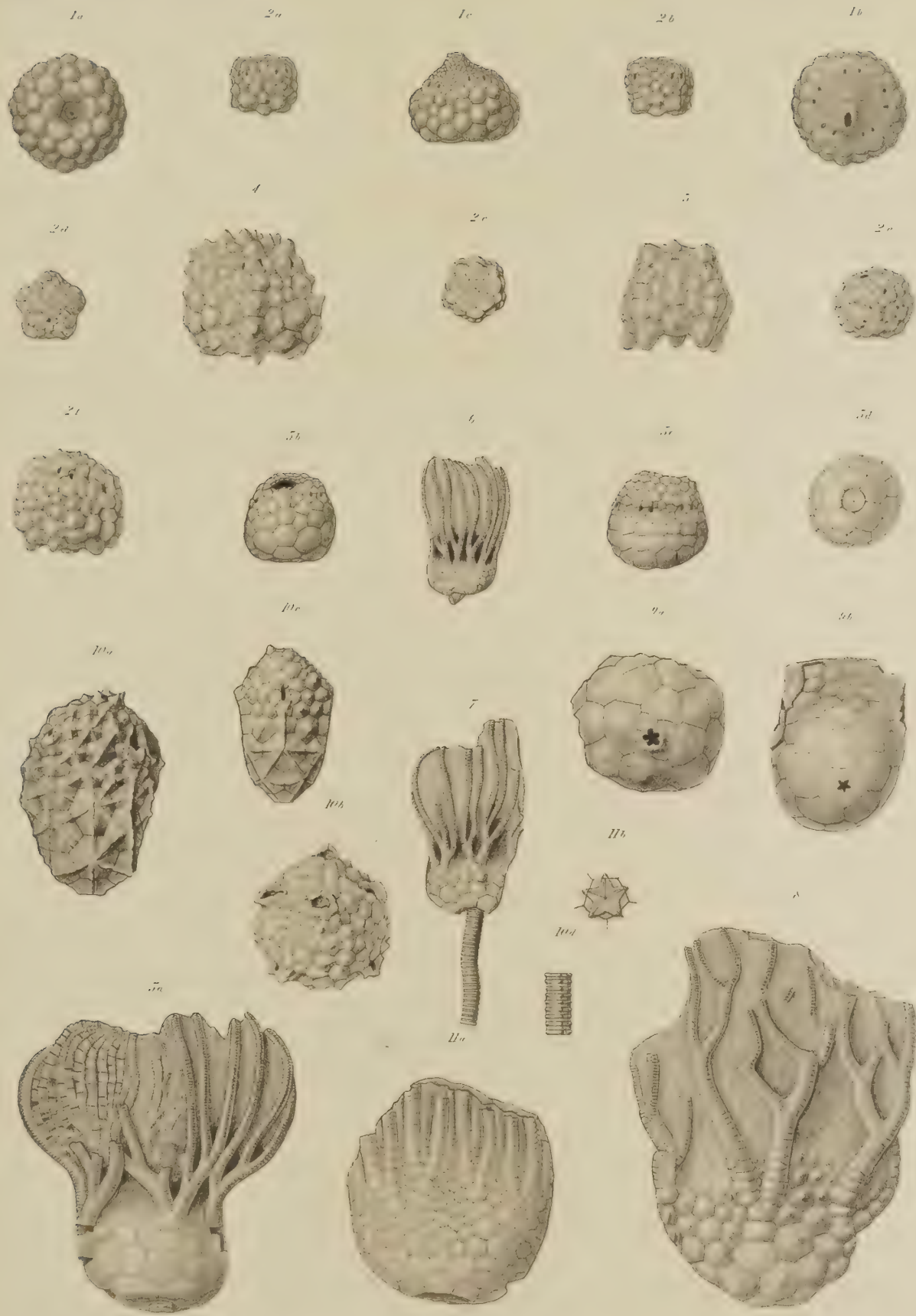


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(All specimens in the collection of Wachsmuth and Springer.)

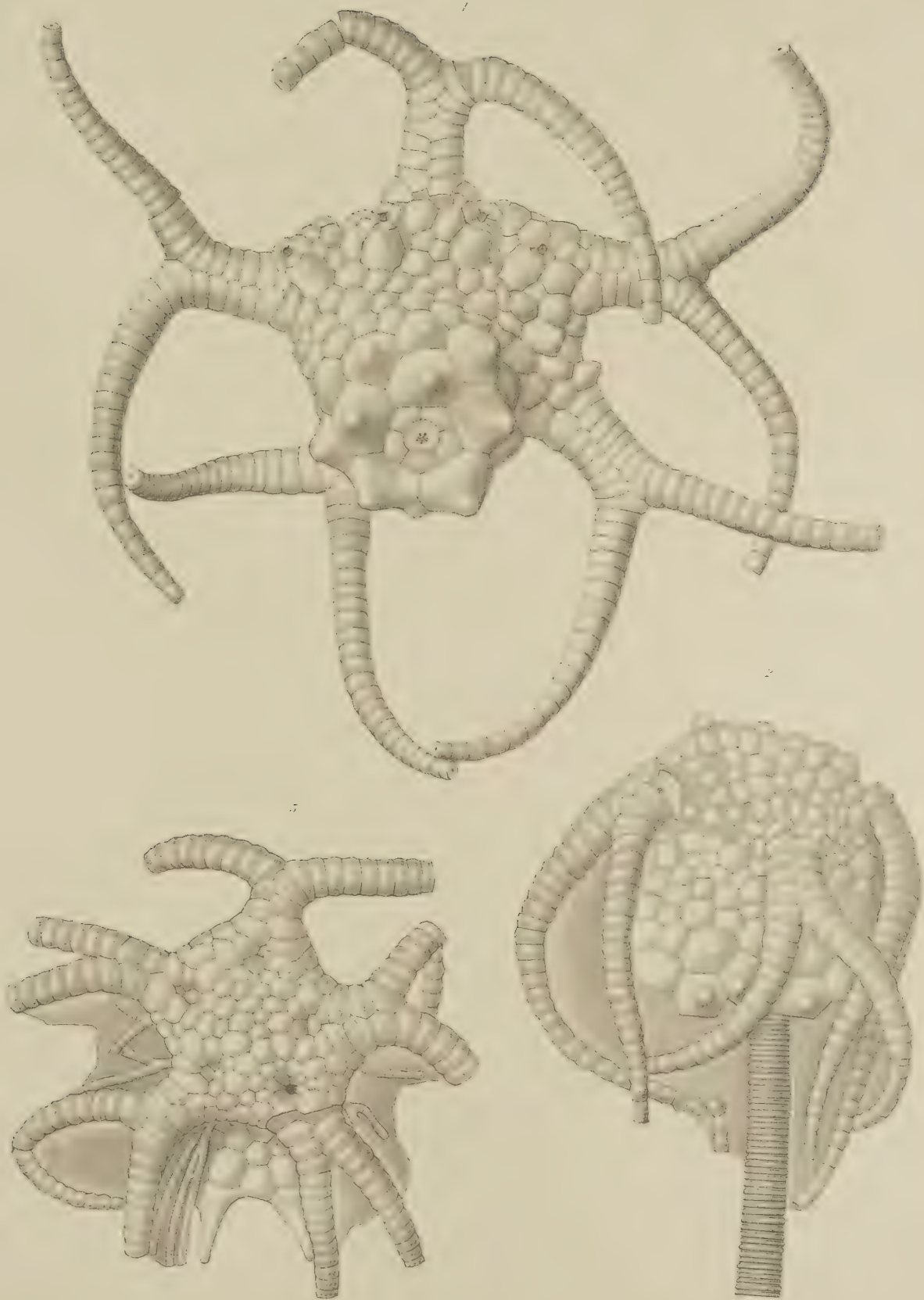


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(All the specimens are in the collection of Wachsmuth and Springer except that illustrated by figs. 3 <i>a</i> , <i>b</i> , <i>c</i> , which is in the Canada Survey Museum at Ottawa.)	

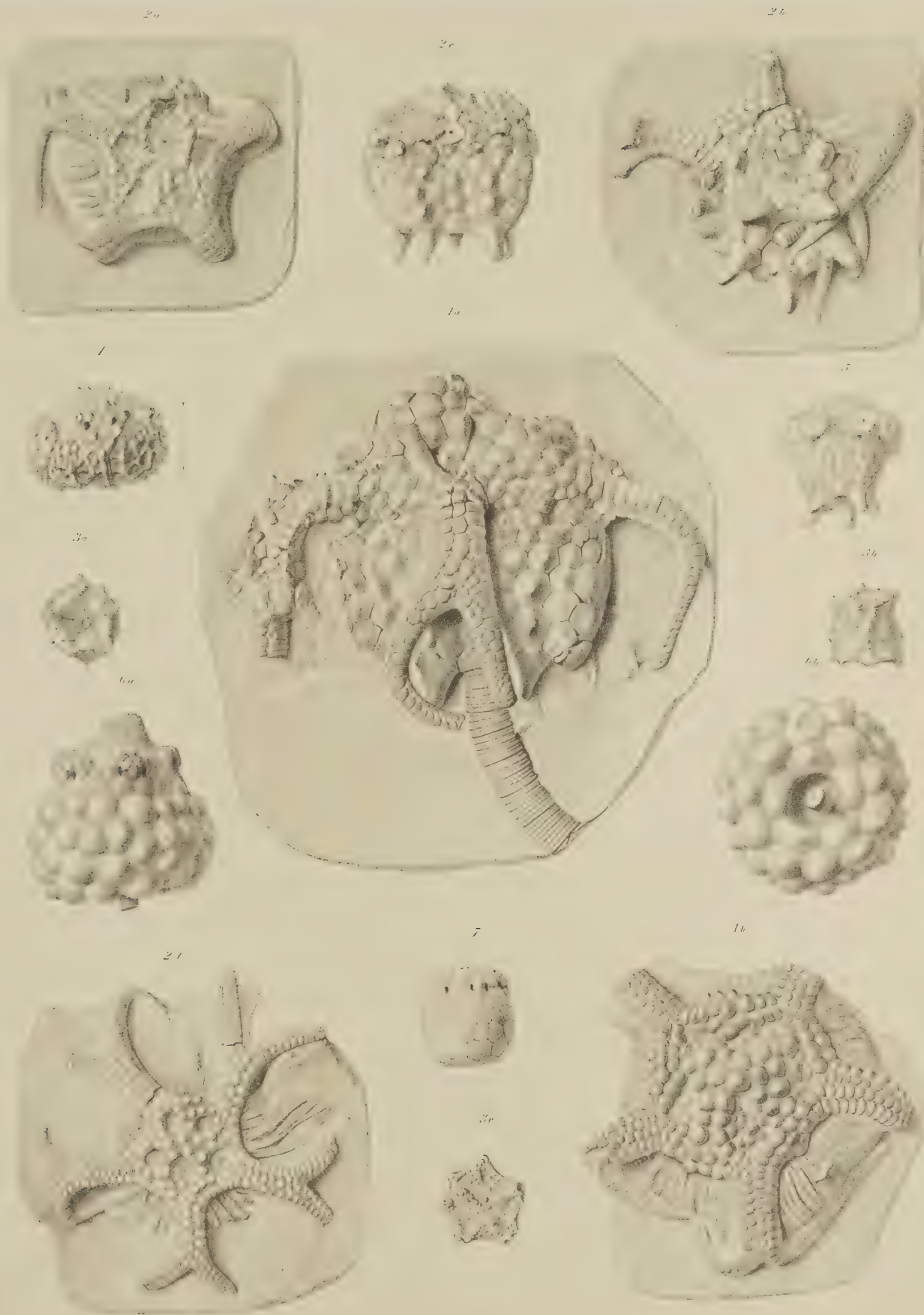


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(All specimens in the collection of Wachsmuth and Springer.)

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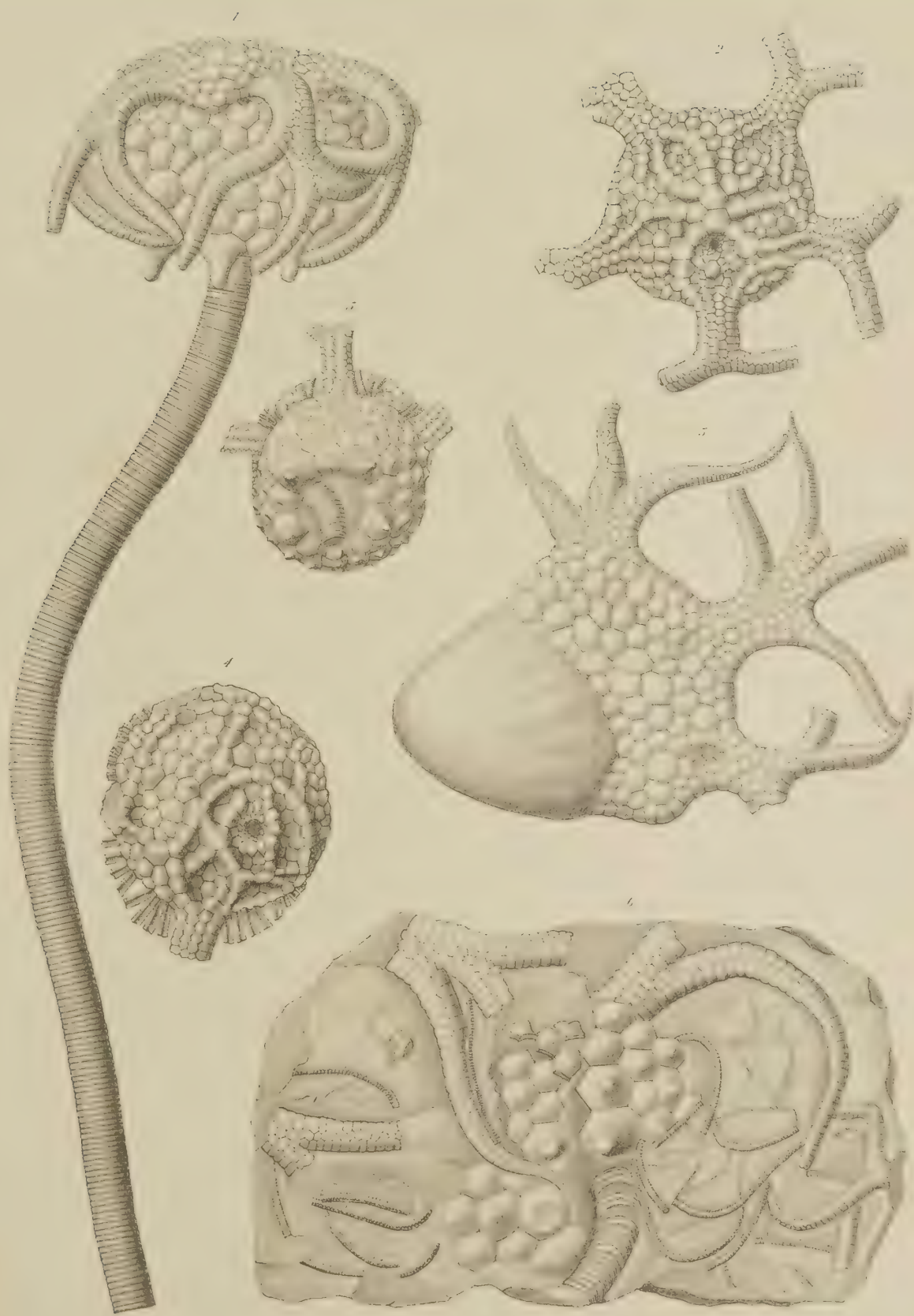
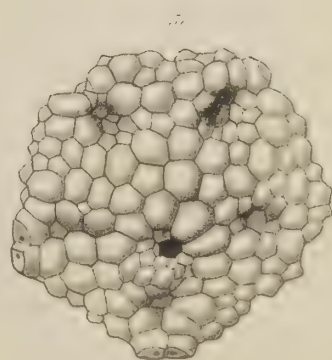
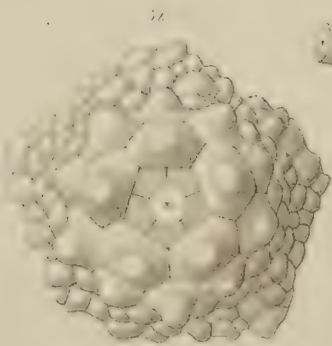
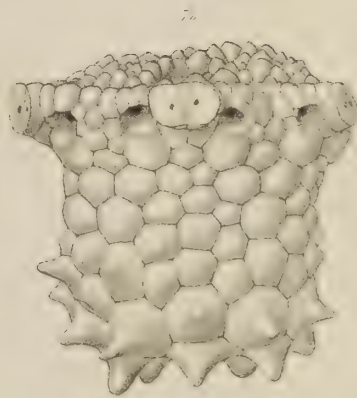
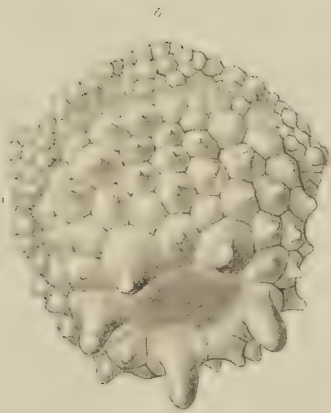
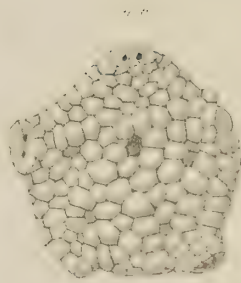
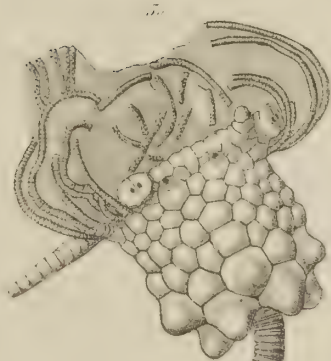
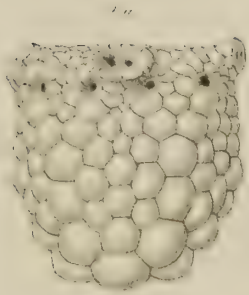
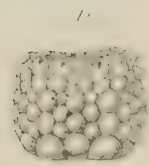
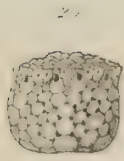
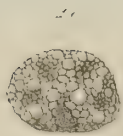
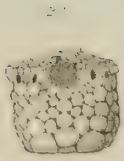
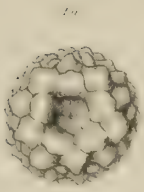


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(All specimens in the collection of Wachsmuth and Springer.)



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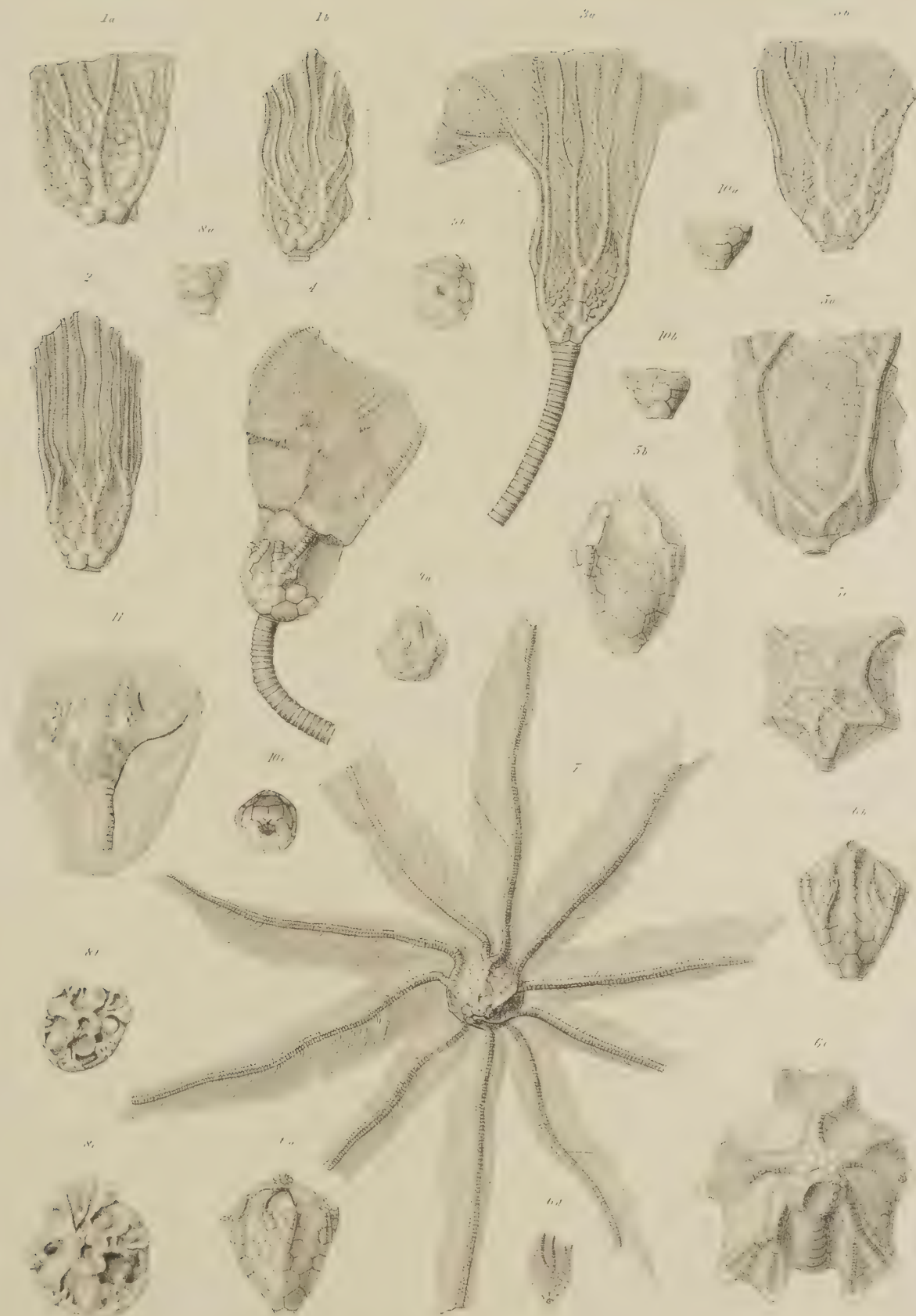


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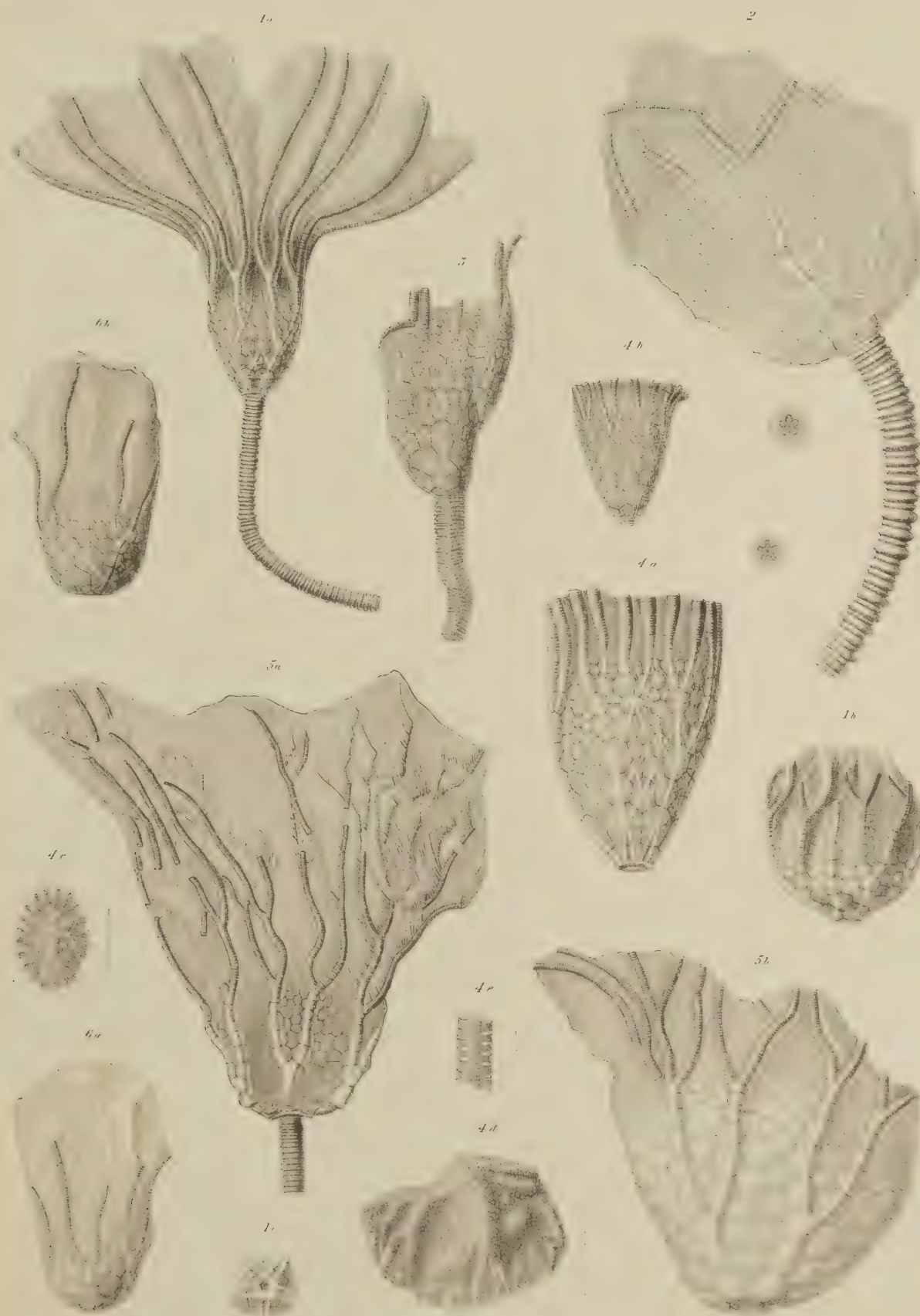
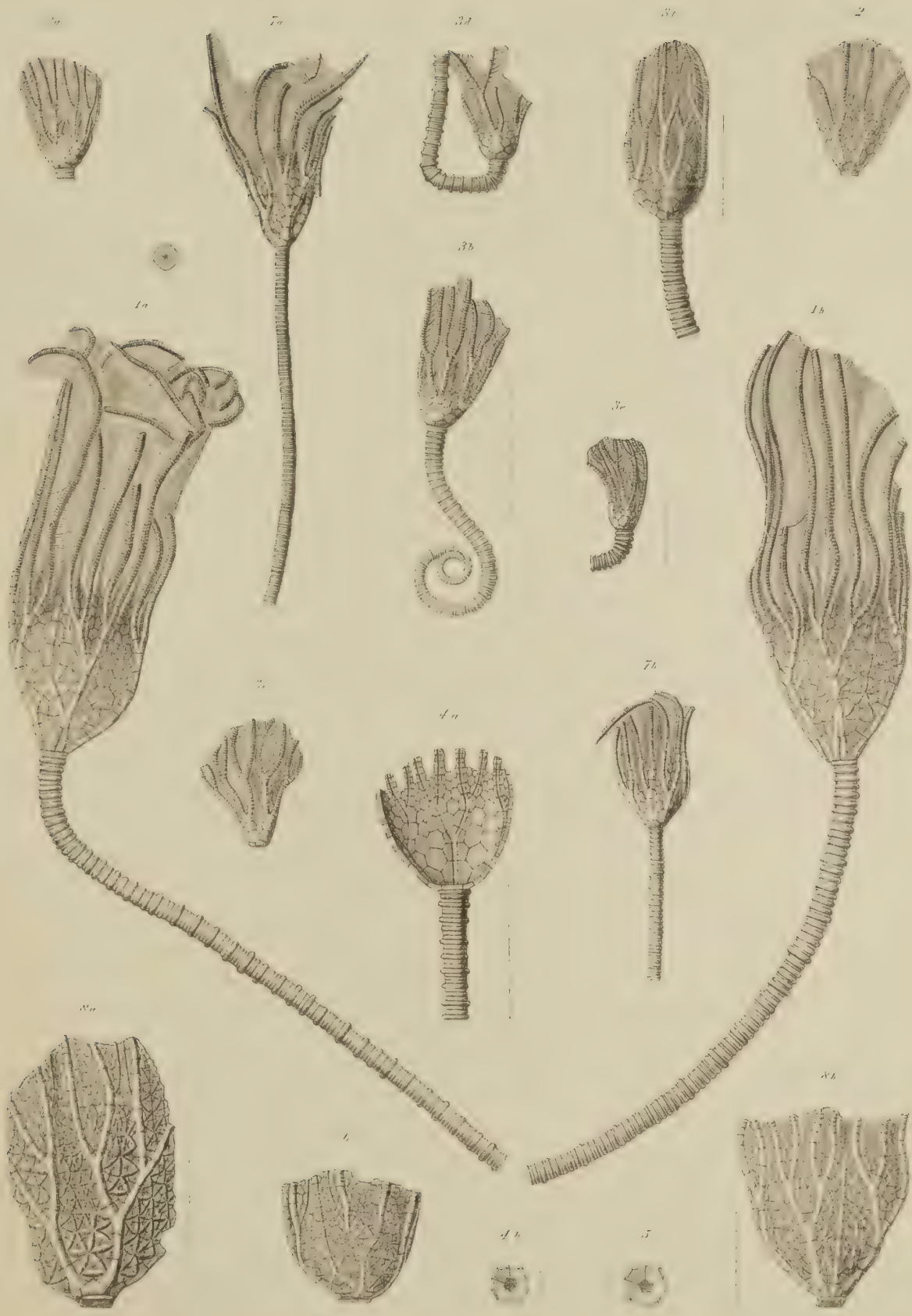


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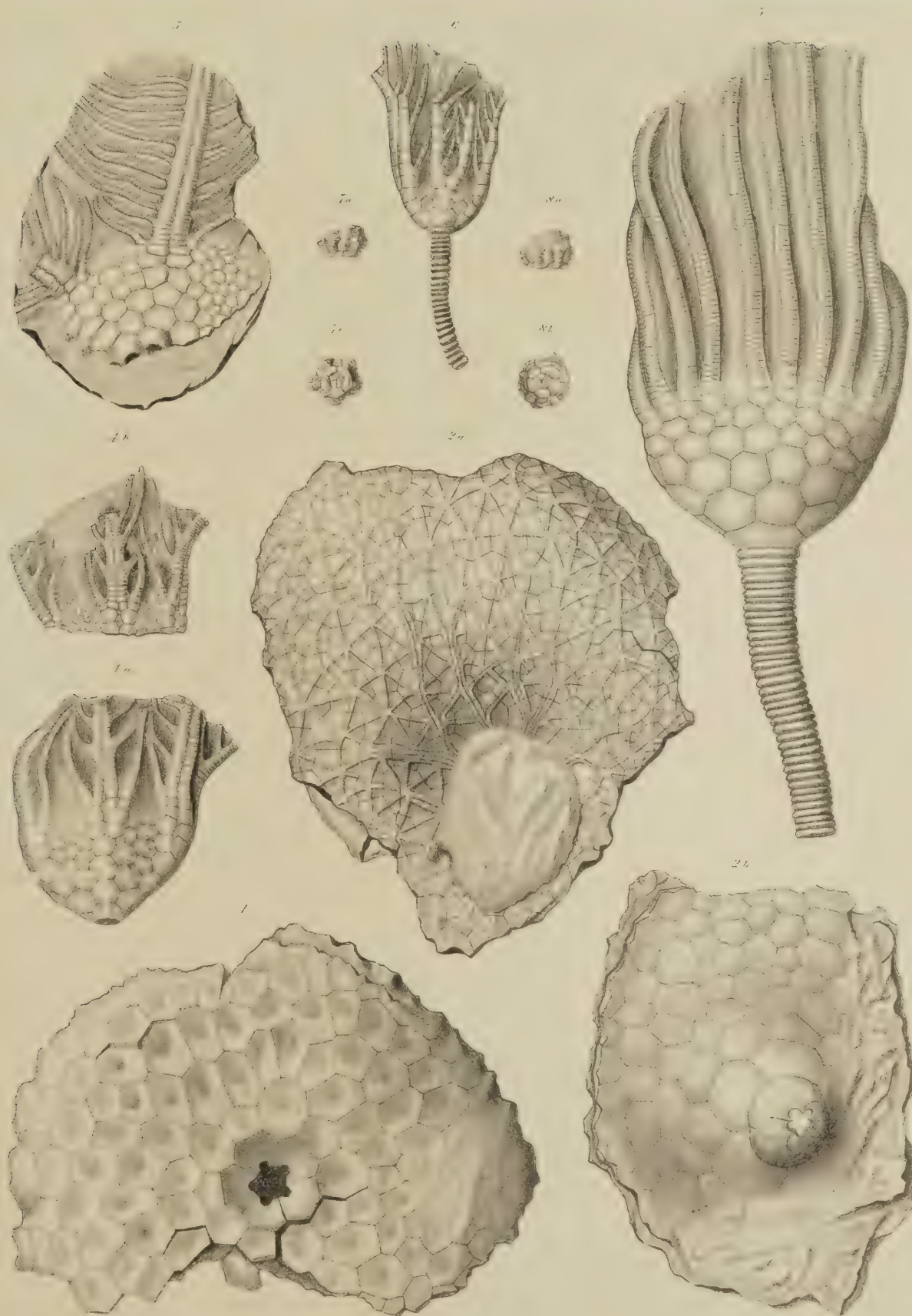


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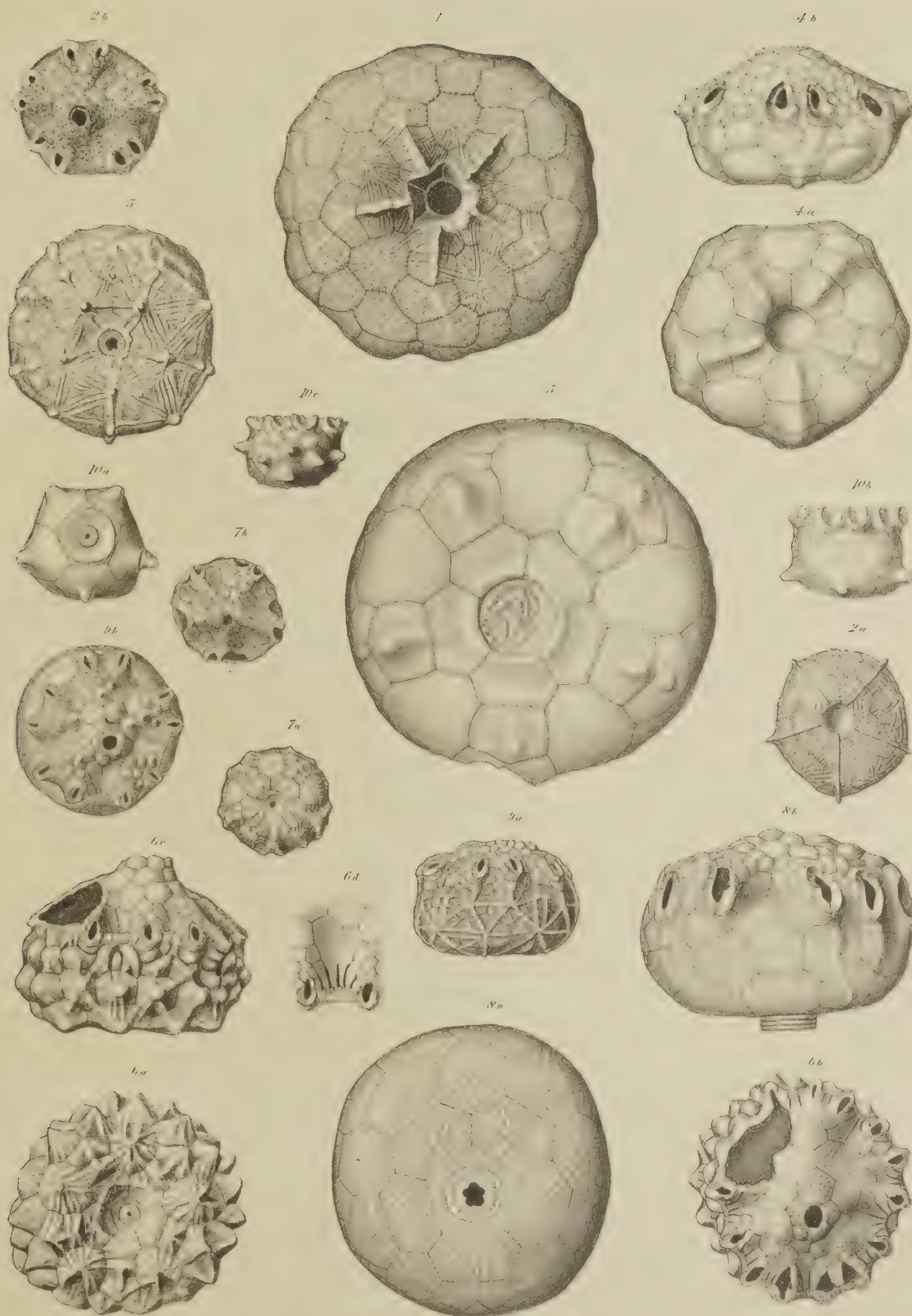


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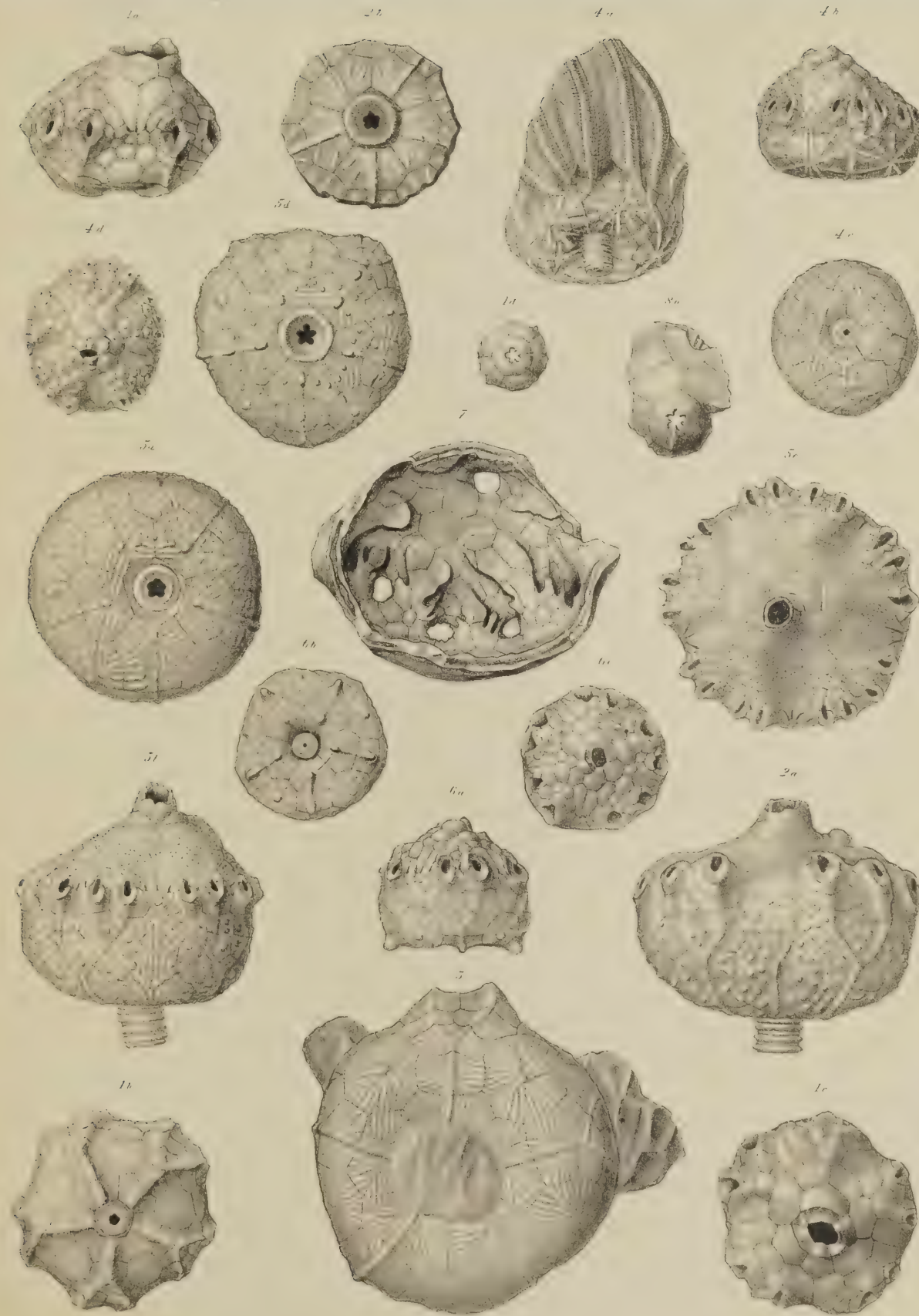


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(All the specimens are in the collection of Wachsmuth and Springer, except that of Fig. 1*a*, which is in the Lyon collection.)

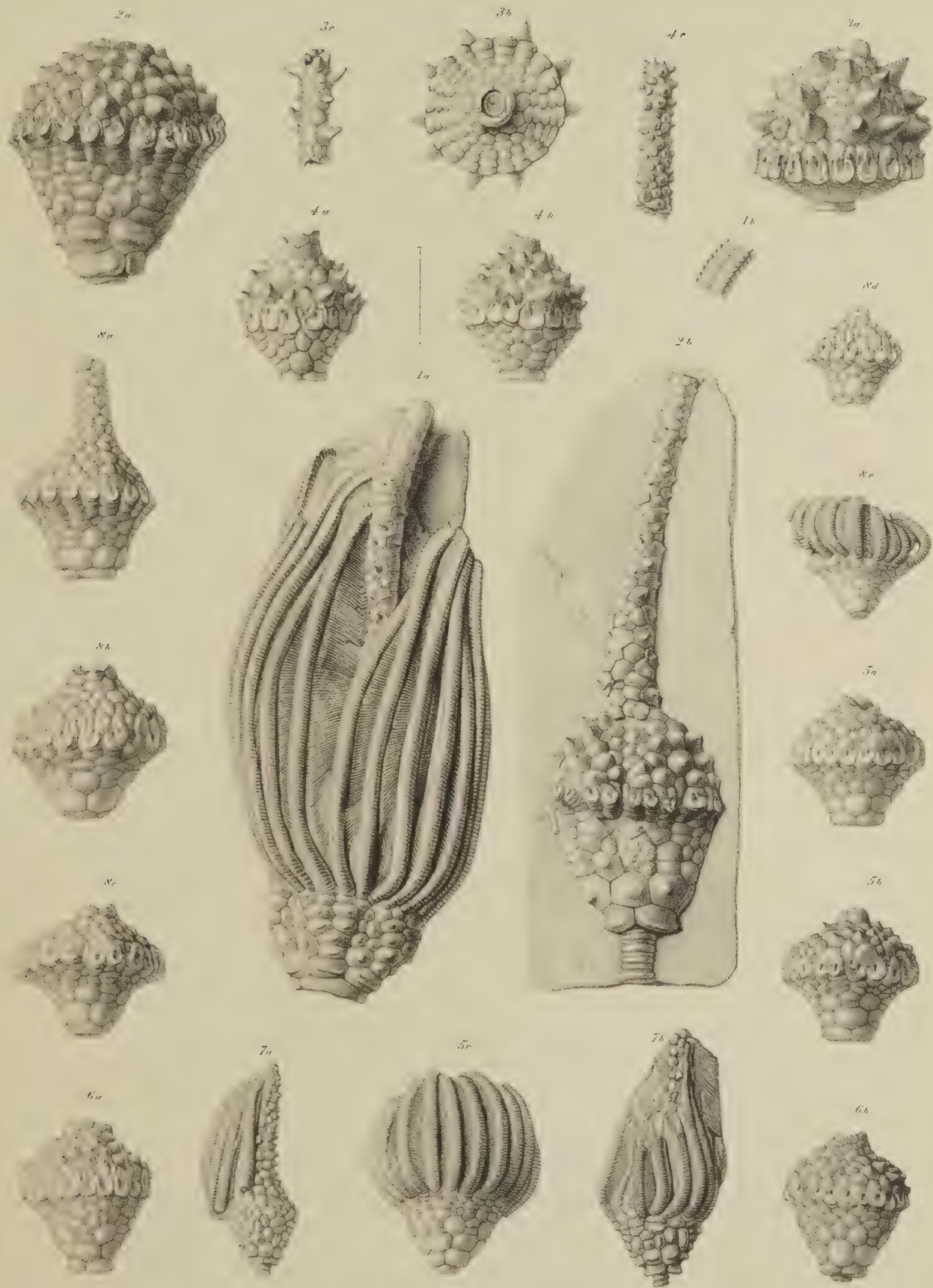


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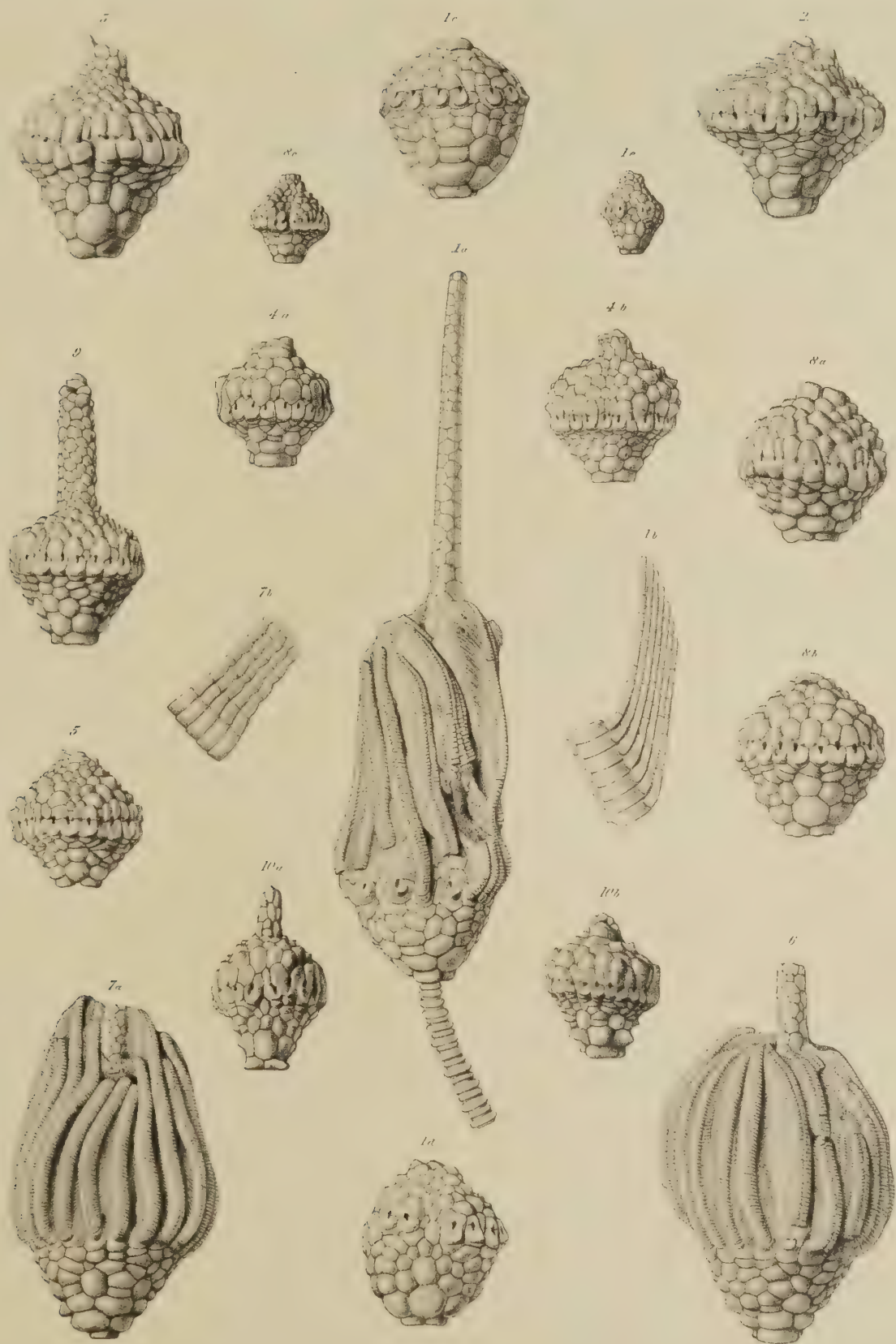


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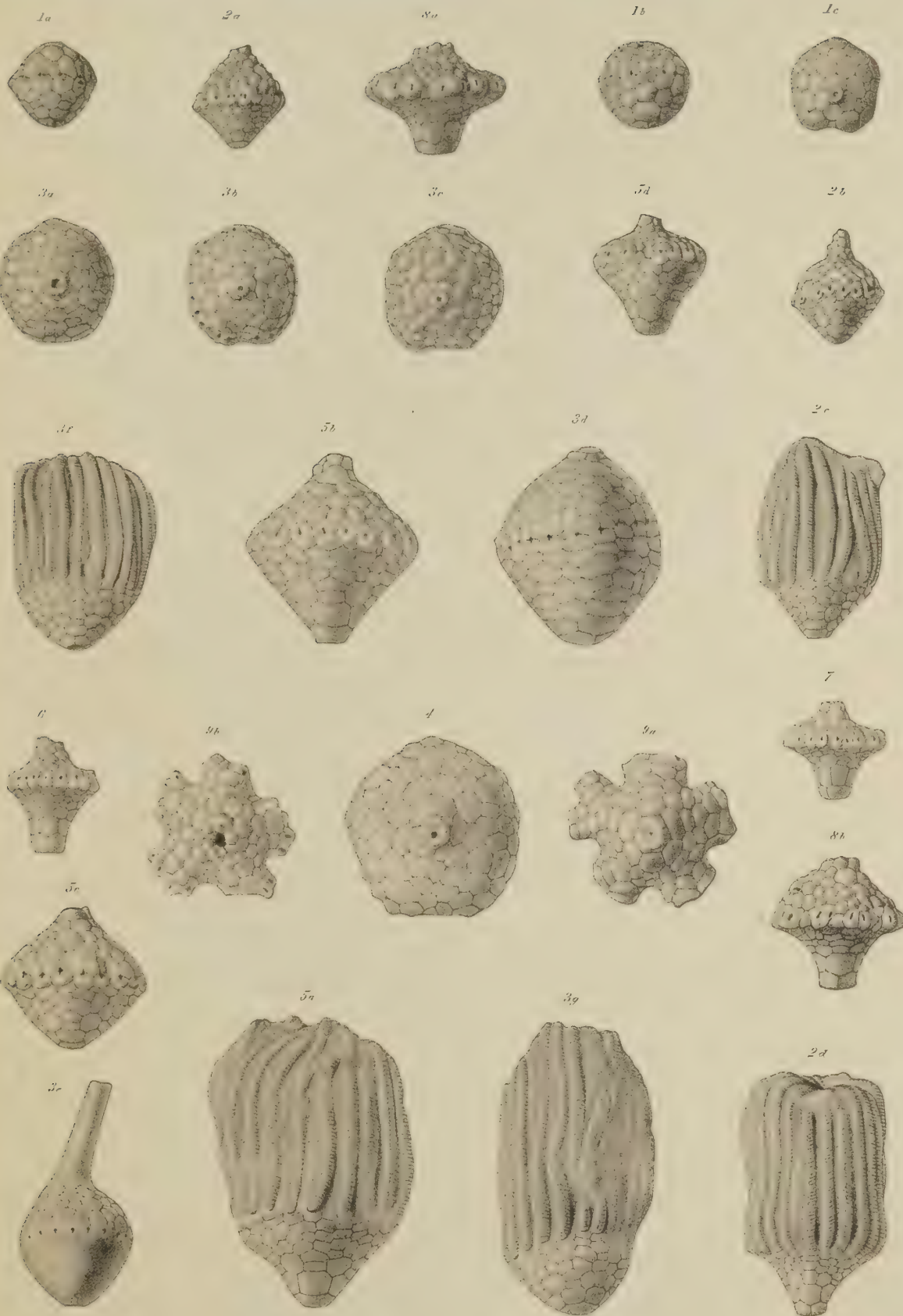


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(All the specimens in the collection of Wachsmuth and Springer, except that of Fig. 7, which is in the Lyon collection.)	

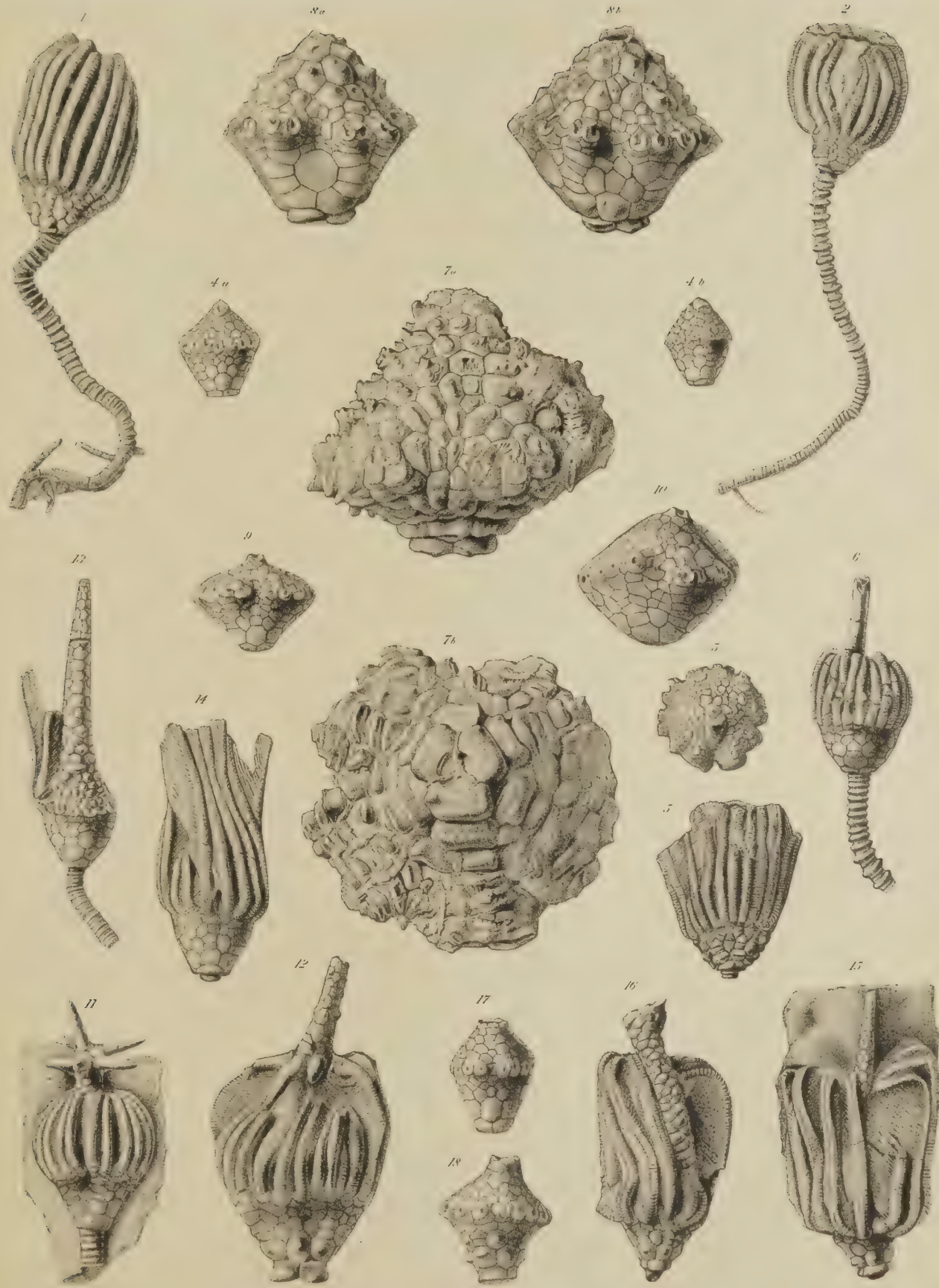


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(All the specimens in the collection of Wachsmuth and Springer.)



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SPINDIDEA CALIFRAT



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(All the specimens are in the collection of Wachsmuth and Springer, except those represented by Figs. 18 <i>a</i> and 18 <i>b</i> , which are in the possession of Mr. R. R. Rowley, and Fig. 19, which is owned by Mr. F. A. Sampson.)	

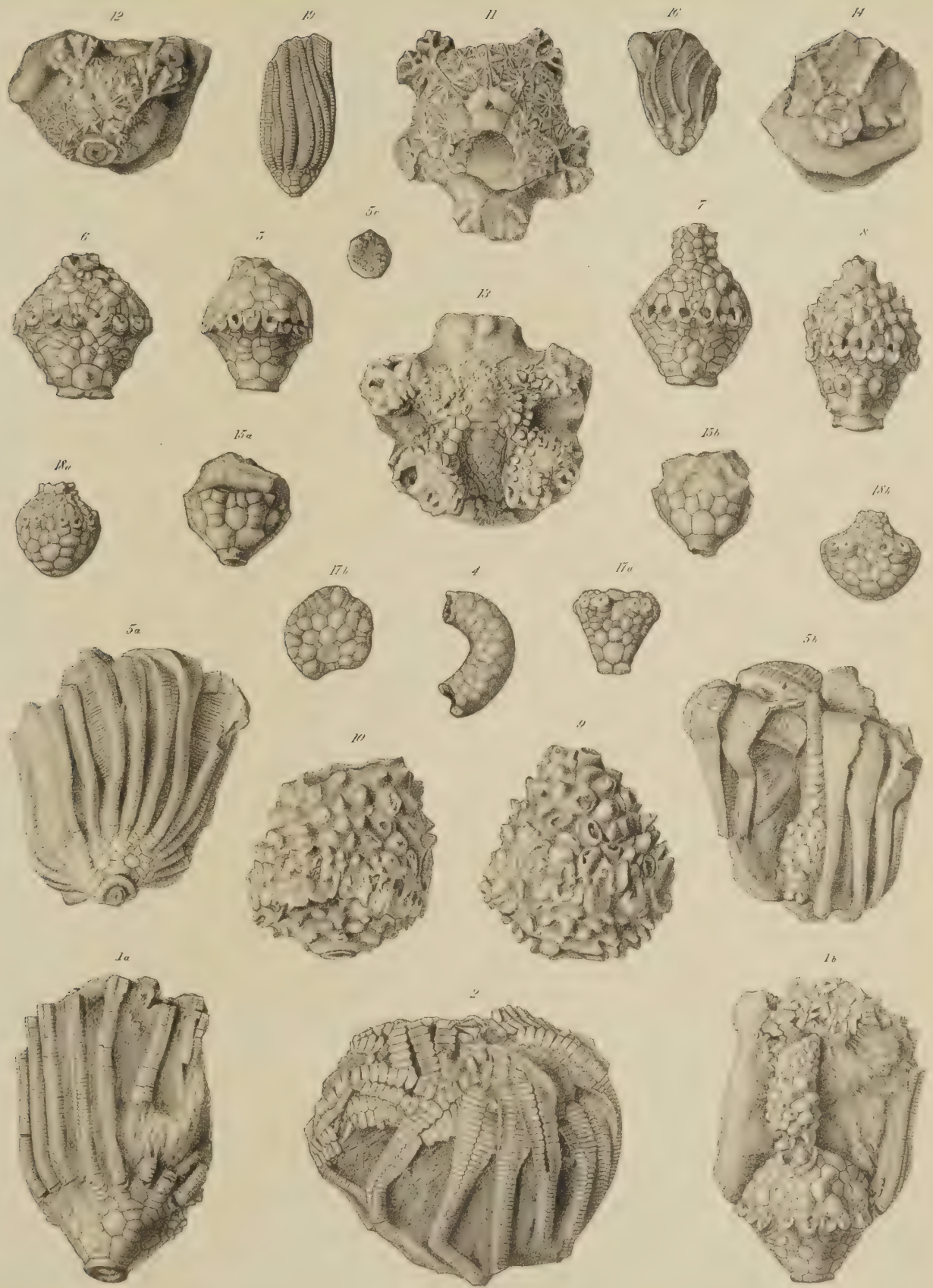


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(All specimens in the collection of Wachsmuth and Springer, unless otherwise stated.)



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(All the specimens in the collection of Wachsmuth and Springer.)

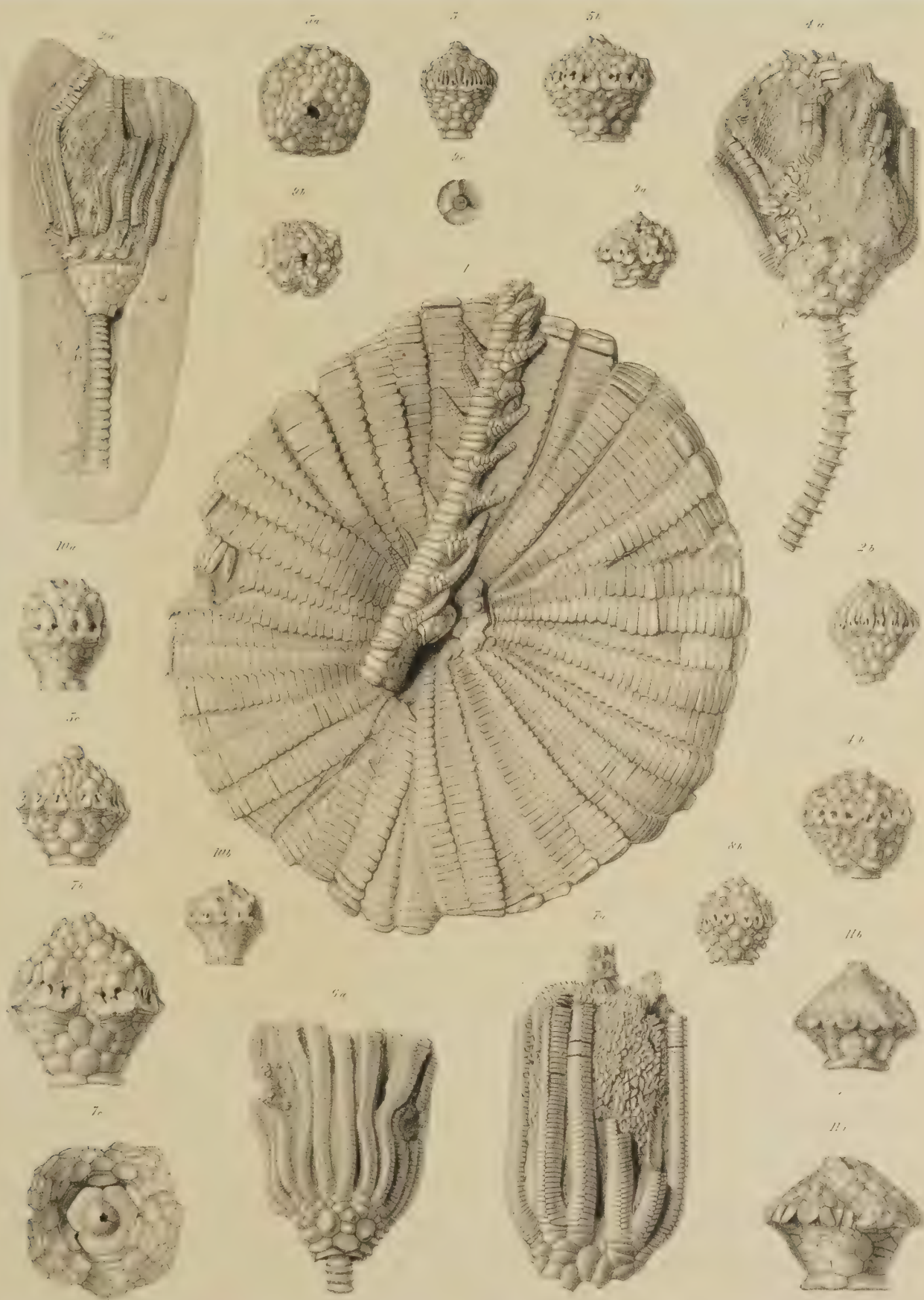


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9b. Ventral aspect of a more lobate specimen.	
(All specimens in the collection of Wachsmuth and Springer.)	

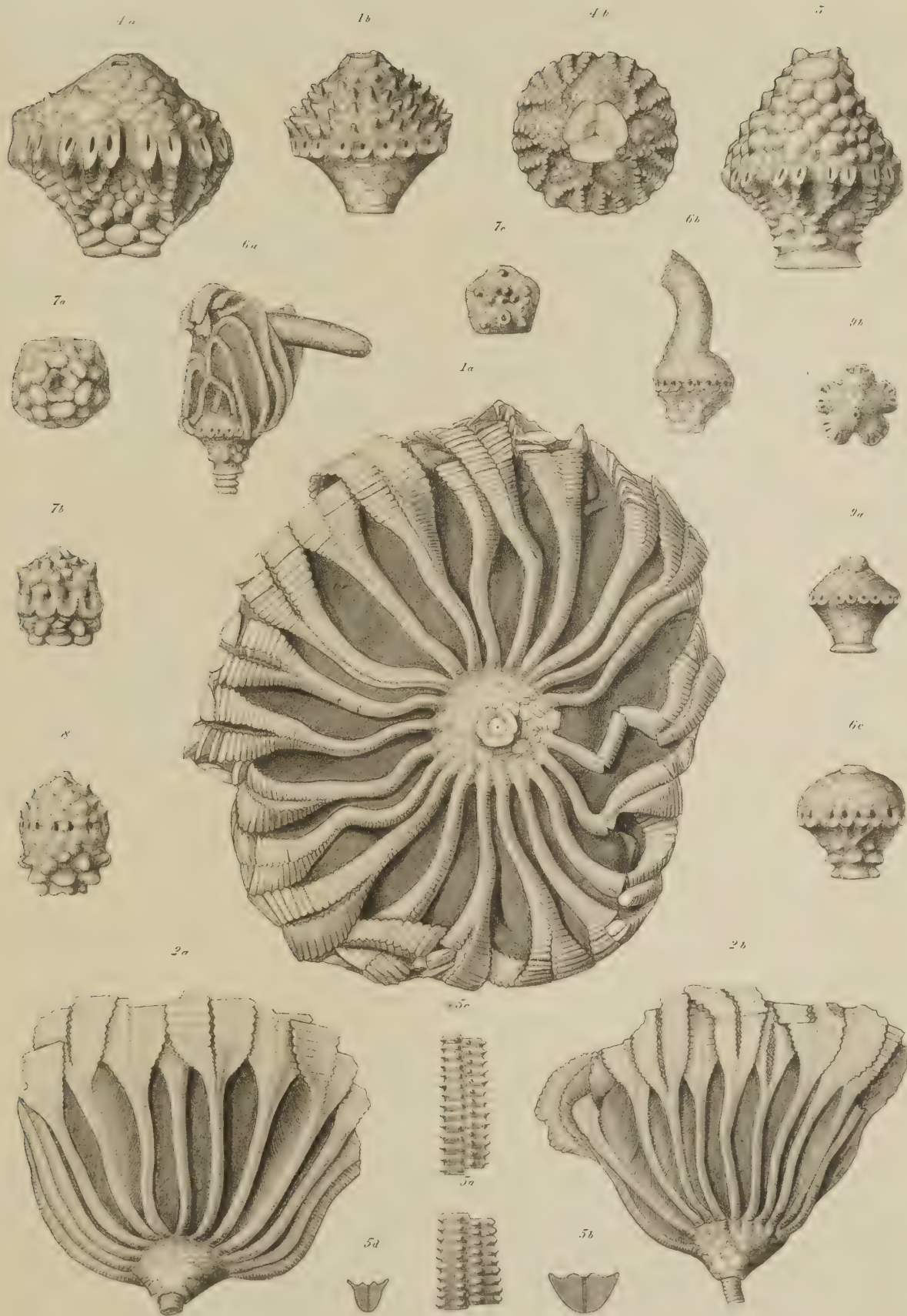


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(All figures from specimens in the collection of Wachsmuth and Springer.)



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AGARICOCRINUS EXCAVATUS Hall	491
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6. Dorsal aspect of the calyx.	
(All the specimens in the collection of Wachsmuth and Springer, except that of Fig. 5, which is in the Museum of Comparative Zoölogy.)	

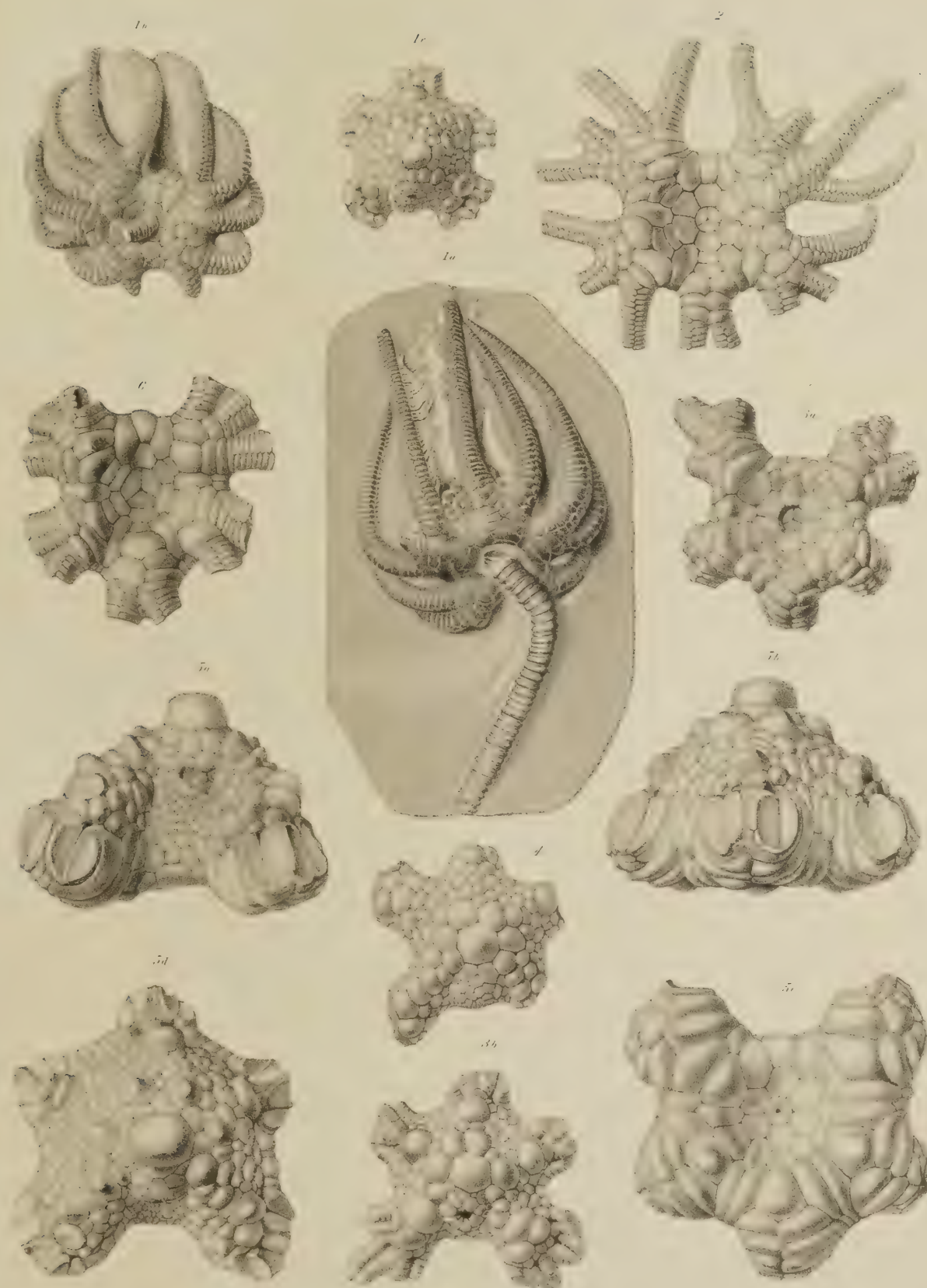


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5. Ventral aspect of a very nodose specimen.	

(All specimens in the collection of Wachsmuth and Springer.)

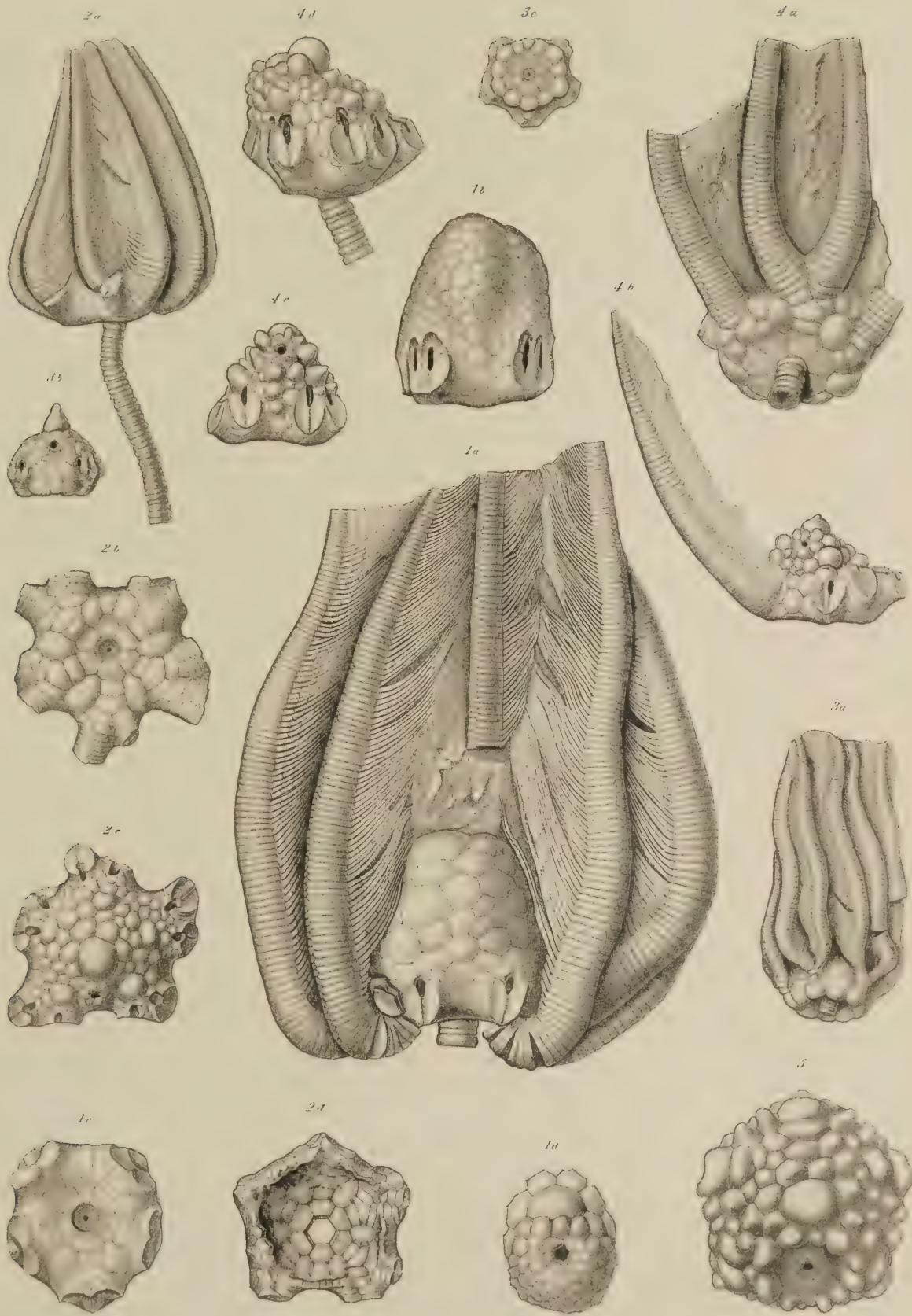


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2a. Posterior side of the calyx (specimen from Tennessee).	
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(All specimens in the collection of Wachsmuth and Springer, unless otherwise stated.)

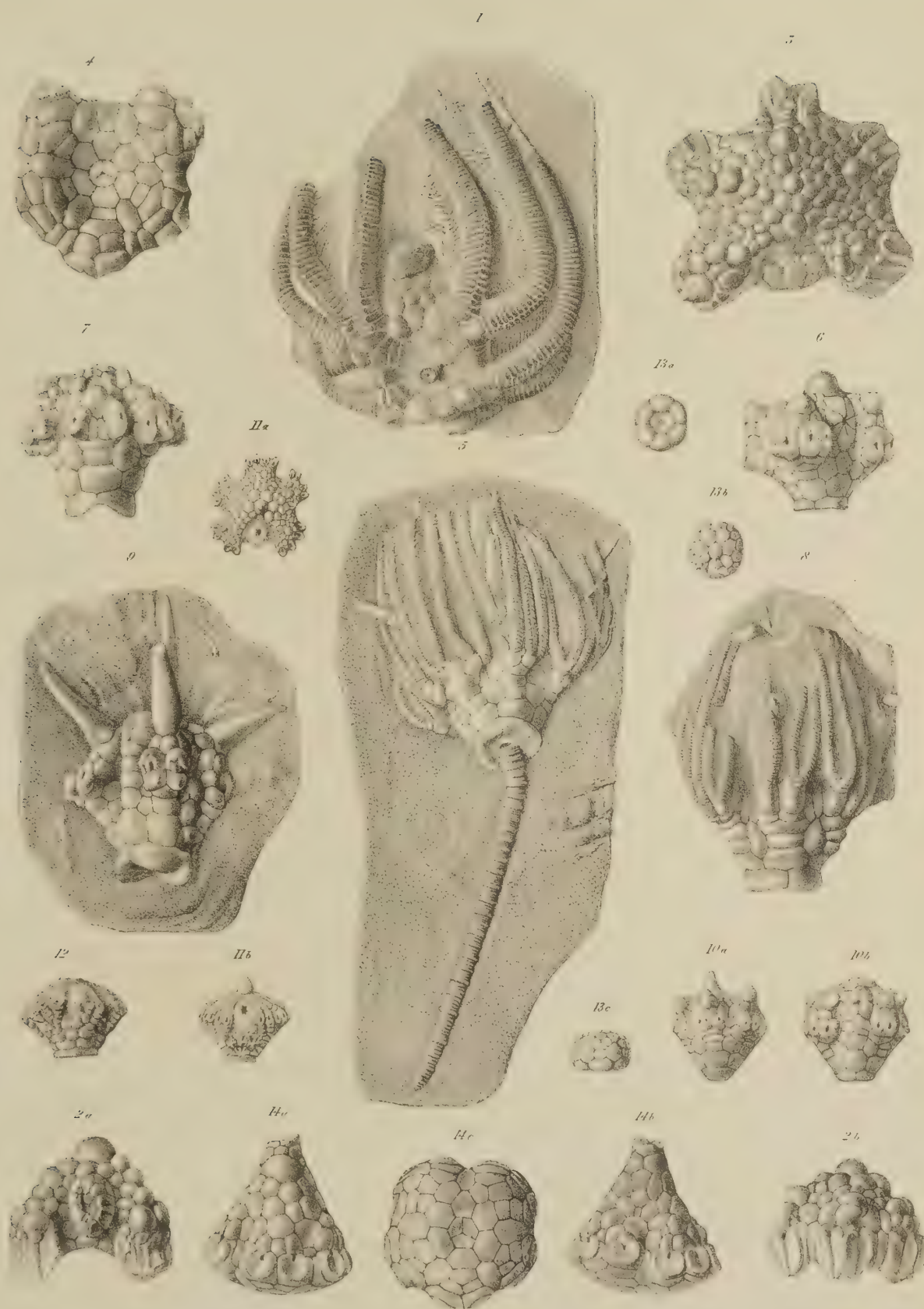


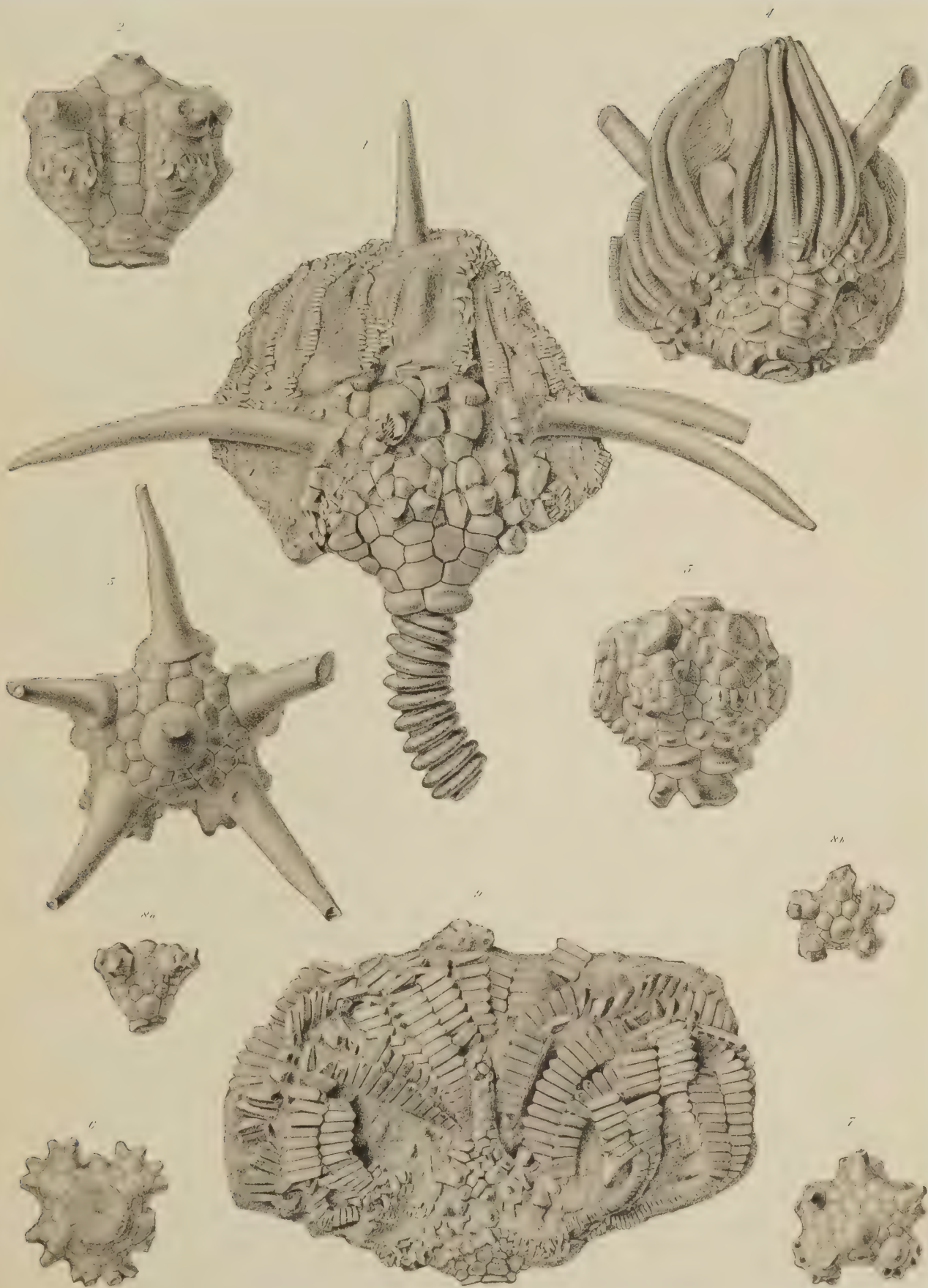
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AGARICOCRINUS NODULOSUS Worthen	497
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DORYCRINUS GOULDI (Hall)	456
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5. Anterior view of the calyx. (Specimen from Kentucky.)	
DORYCRINUS CORNIGERUS (Hall)	458
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AOROCRINUS SPINOSULUS (Hall)	478
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ERETMOCRINUS REMIBRACHIATUS, var. EXPANSUS W. and Sp. . . .	390
9. A large specimen, showing the calyx, anal tube, and the infolding of the arms.	
(All the specimens in the collection of Wachsmuth and Springer.)	



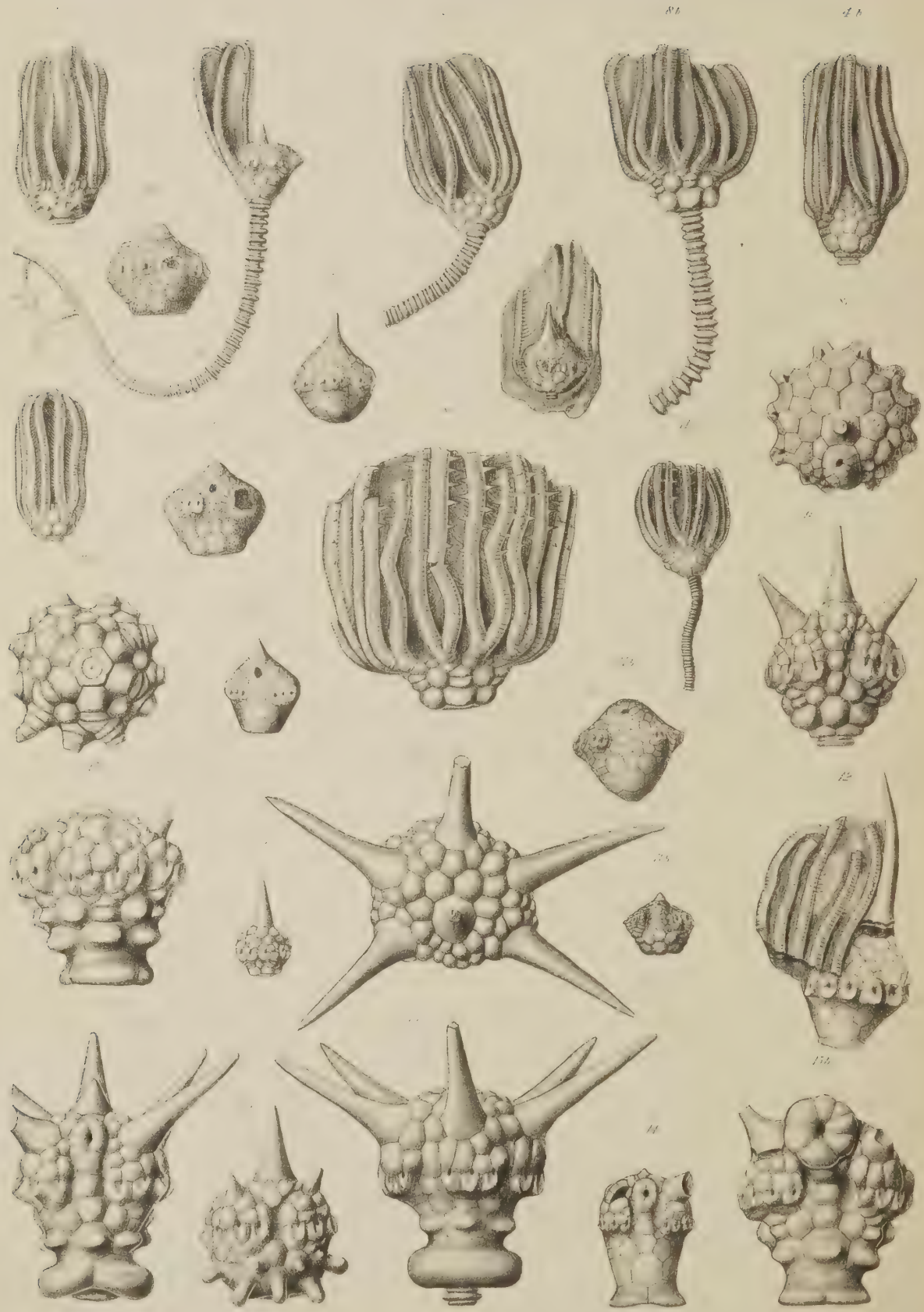


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8c. Ventral aspect of a large calyx.	
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8e. Anterior view of a young specimen.	
9. Posterior view of the form described by Hall as <i>Actinocrinus tricornis</i> .	
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11b. Posterior side of calyx of a large specimen.	

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DORYCRINUS UNISPINA (Hall)	467
Fig. 12. Specimen with an unusually large spine and portions of the arms.	
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(All specimens, except 6 and 7b, in the collection of Wachsmuth and Springer.)

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<i>DIZYGOCRINUS MONTGOMERYENSIS</i> Worthen	428
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11a. Posterior view of the type specimen. (Coll. F. A. Sampson.)	
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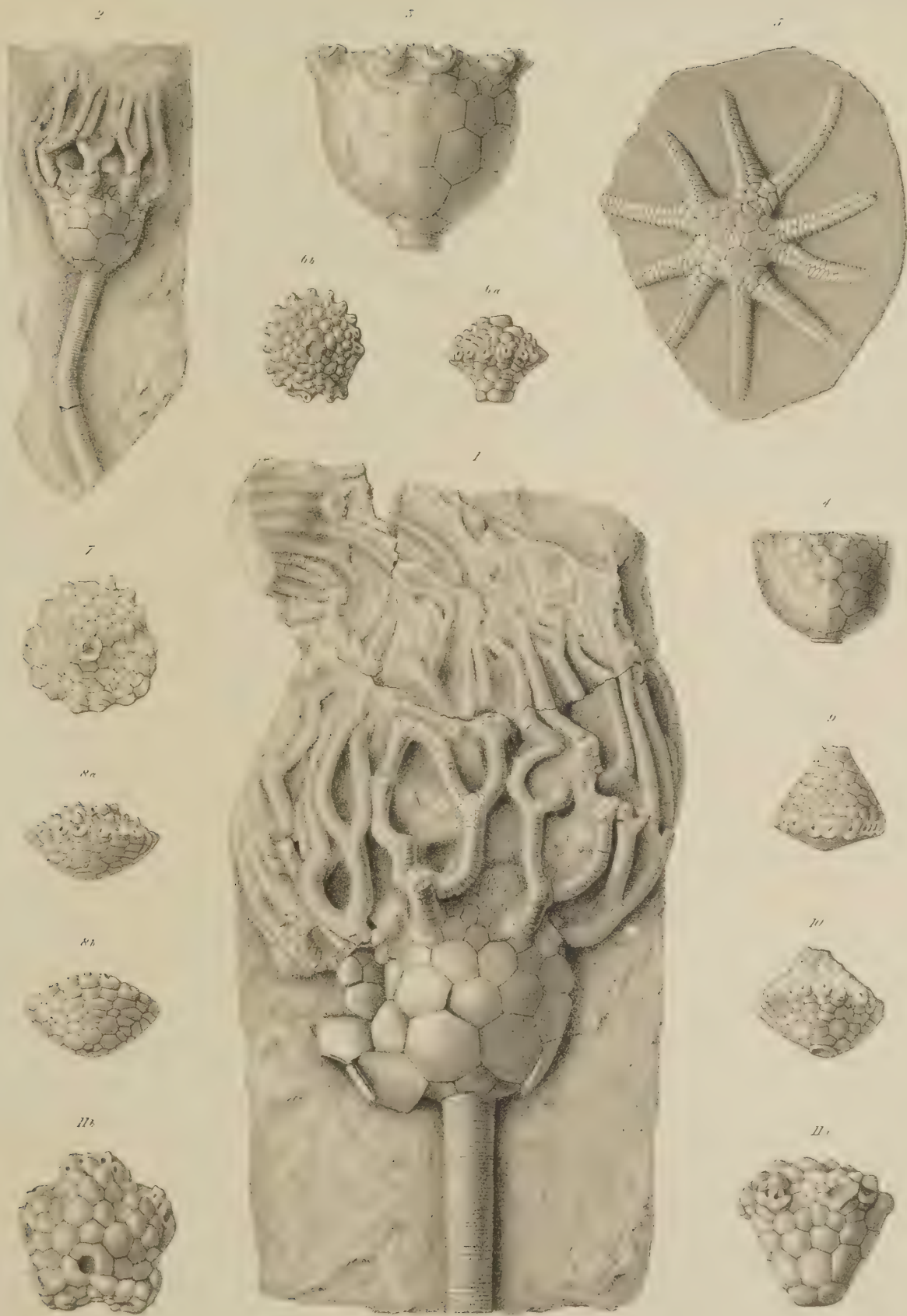


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1 <i>b</i> . Ventral aspect of the same.	
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(All the specimens are in the collection of Wachsmuth and Springer.)

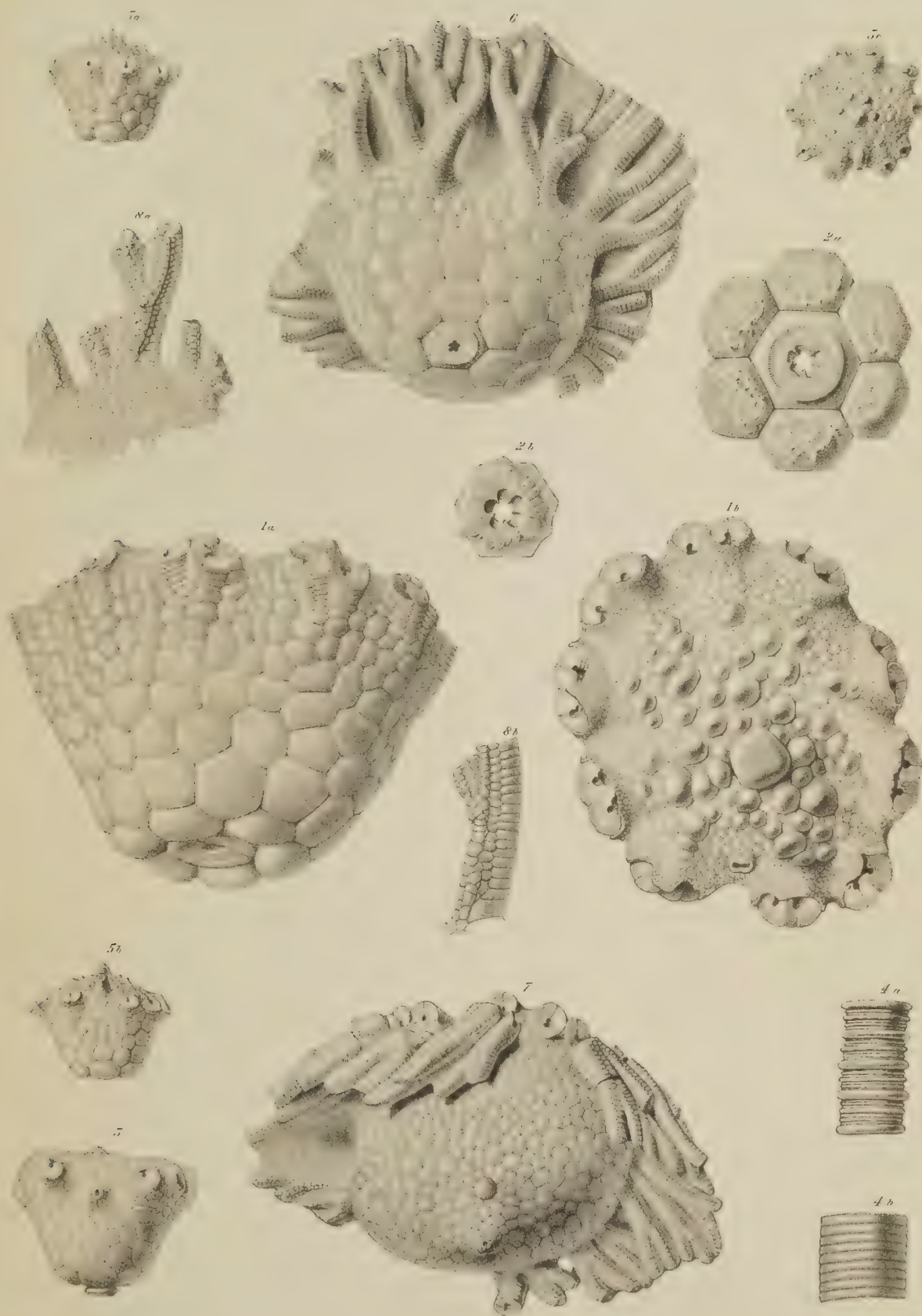


PLATE XLVIII.

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1 <i>b</i> . Dorsal aspect of the same specimen.	
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5 <i>a</i> . Dorsal view of the calyx. (Coll. W. and Sp.)	
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5 <i>c</i> . Ventral aspect of the same specimen.	
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6 <i>a</i> . Dorsal aspect of the calyx. (Coll. W. and Sp.)	
6 <i>b</i> . Ventral aspect of the type specimen. (Lyon collection.)	
6 <i>c</i> . Anterior view of a smaller specimen, showing portion of the anal tube. (Same collection.)	

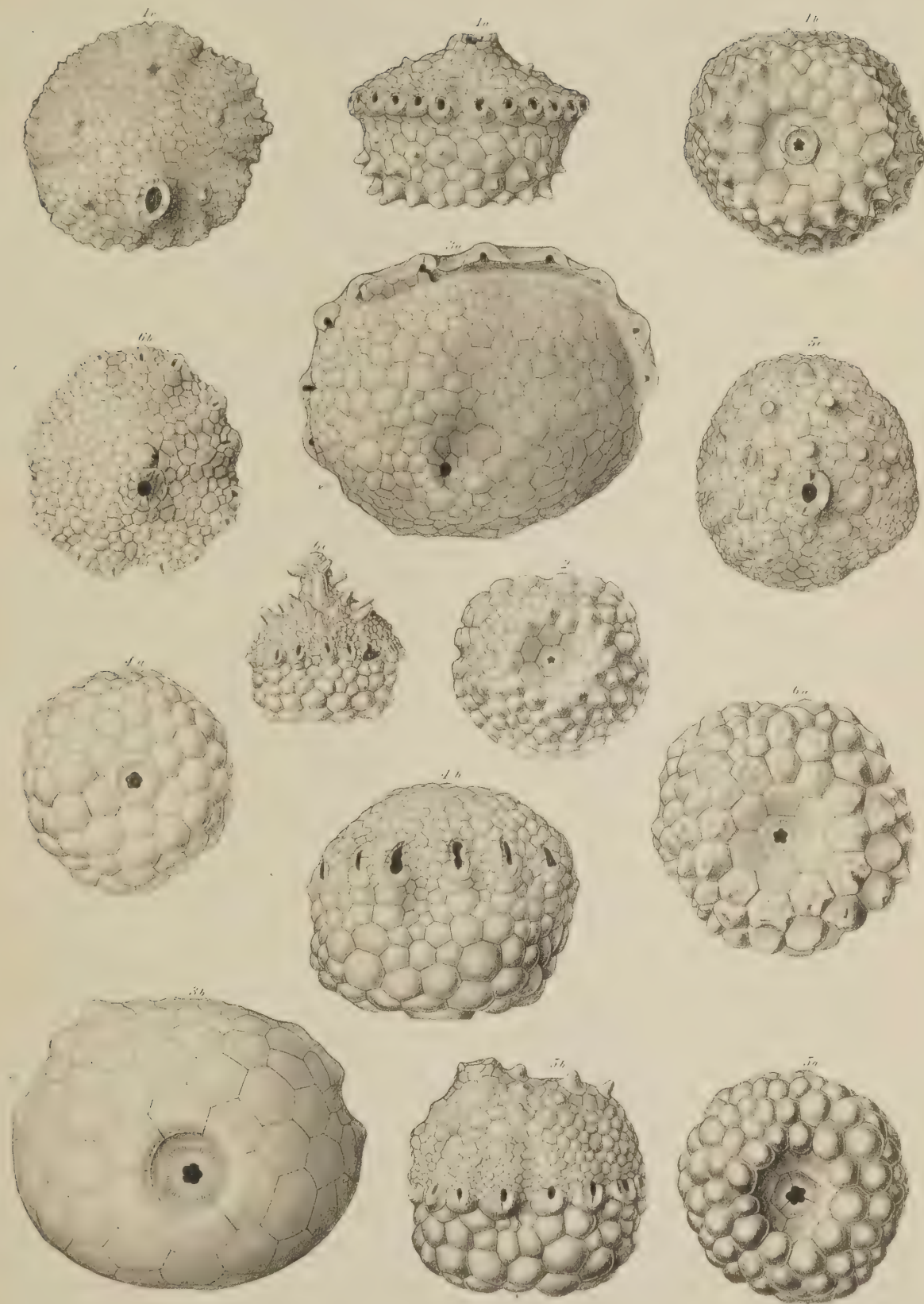


PLATE XLIX.

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MEGISTOCRINUS ABNORMIS Lyon	546
Fig. 1 <i>a</i> . Dorsal aspect of the calyx. (Coll. W. and Sp.)	
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MEGISTOCRINUS DEPRESSUS Hall	540
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5 <i>b</i> . Ventral aspect of another specimen. (Same collection.)	
MEGISTOCRINUS MULTIDECORATUS Barris	542
6. Lateral aspect of the type specimen. (Same collection.)	

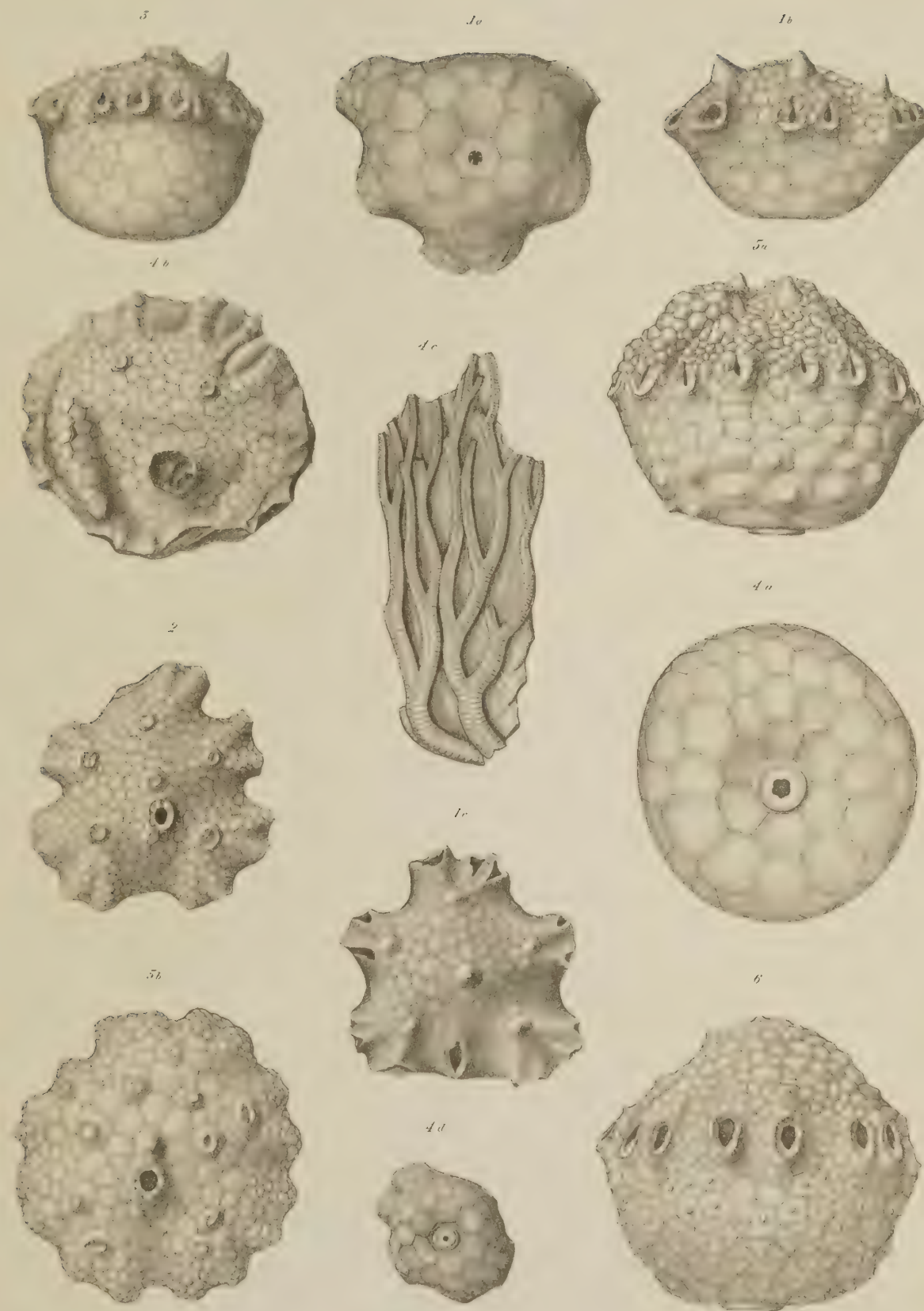


PLATE L.

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Fig. 1 <i>a</i> . Posterior side of an internal cast. (Coll. W. C. Egan.)	
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2 <i>c</i> . Lateral view of a specimen figured by S. A. Miller as <i>Saccocrinus Egani</i> . (Same collection.)	
2 <i>d</i> . Ventral aspect of another cast, figured as <i>S. Egani</i> . (Same collection.)	
PERIECHOCRINUS ORNATUS Hall and Whitf.	527
3 <i>a</i> . Gutta-percha cast from a mould in the rock, showing surface markings; posterior side. (After Hall and Whitfield.)	
3 <i>b</i> . Anterior view of an internal cast. (After Hall and Whitfield.)	
PERIECHOCRINUS TENNESSEENSIS (Hall)	528
4. Posterior view of Rømer's type specimen. (After Rømer.)	
PERIECHOCRINUS URNIFORMIS (S. A. Miller)	526
5 <i>a</i> . Posterior view of an internal cast. (Coll. W. C. Egan.)	
5 <i>b</i> . Ventral aspect of another cast. (Same collection.)	
PERIECHOCRINUS SPECIOSUS (Hall)	521
6 <i>a</i> . The type specimen. (After Hall.)	
6 <i>b</i> . Part of an arm enlarged. (After Hall.)	
PERIECHOCRINUS MARCOUANUS (Winch. and Marcy)	523
7 <i>a</i> . Side view of an internal cast; anal side to the left. (Coll. W. C. Egan.)	
7 <i>b</i> . Anterior view of the dorsal cup. (Same collection.)	

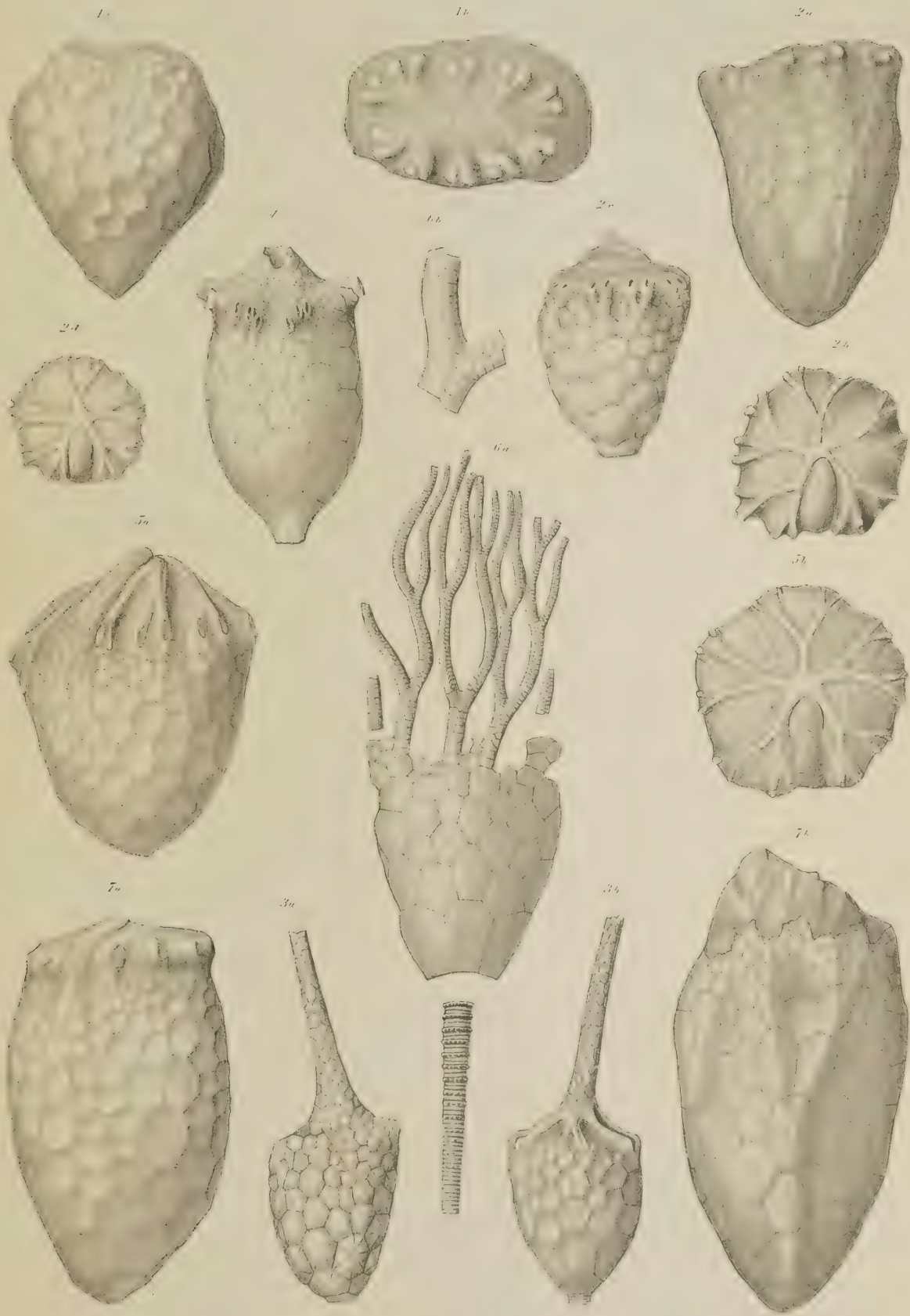


PLATE LI.

	PAGE
PERIECHOCRINUS WHITFIELDI (Hall)	522
Fig. 1. A very large and unique specimen with arms.	
2a. Side view of the dorsal cup. (After Hall.)	
2b. The plates of one ray, showing ornamentation. (After Hall.)	
3. Posterior view of a large elongate specimen.	
4. Ventral aspect of another specimen.	
PERIECHOCRINUS MARCOUANUS (Winch. and Marcy)	523
Side view of the dorsal cup.	
PERIECHOCRINUS TENUIDISCUS (Hall)	531
6. Antero-lateral view of the dorsal cup.	
PERIECHOCRINUS ORNATUS (Hall)	527
7. Side view of the calyx; from St. Paul, Ind.	
MEGISTOCRINUS NOBILIS W. and Sp.	537
8. A young specimen. (Type of <i>Megistocrinus parvus</i> .)	
PERIECHOCRINUS WHITEI (Hall)	530
9. Anterior view of a large specimen with arms from the Lower Burlington group.	
10. A specimen from the Kinderhook group of Marshall Co., Iowa.	
(All specimens, except 2a and b, in the collection of Wachsmuth and Springer.)	

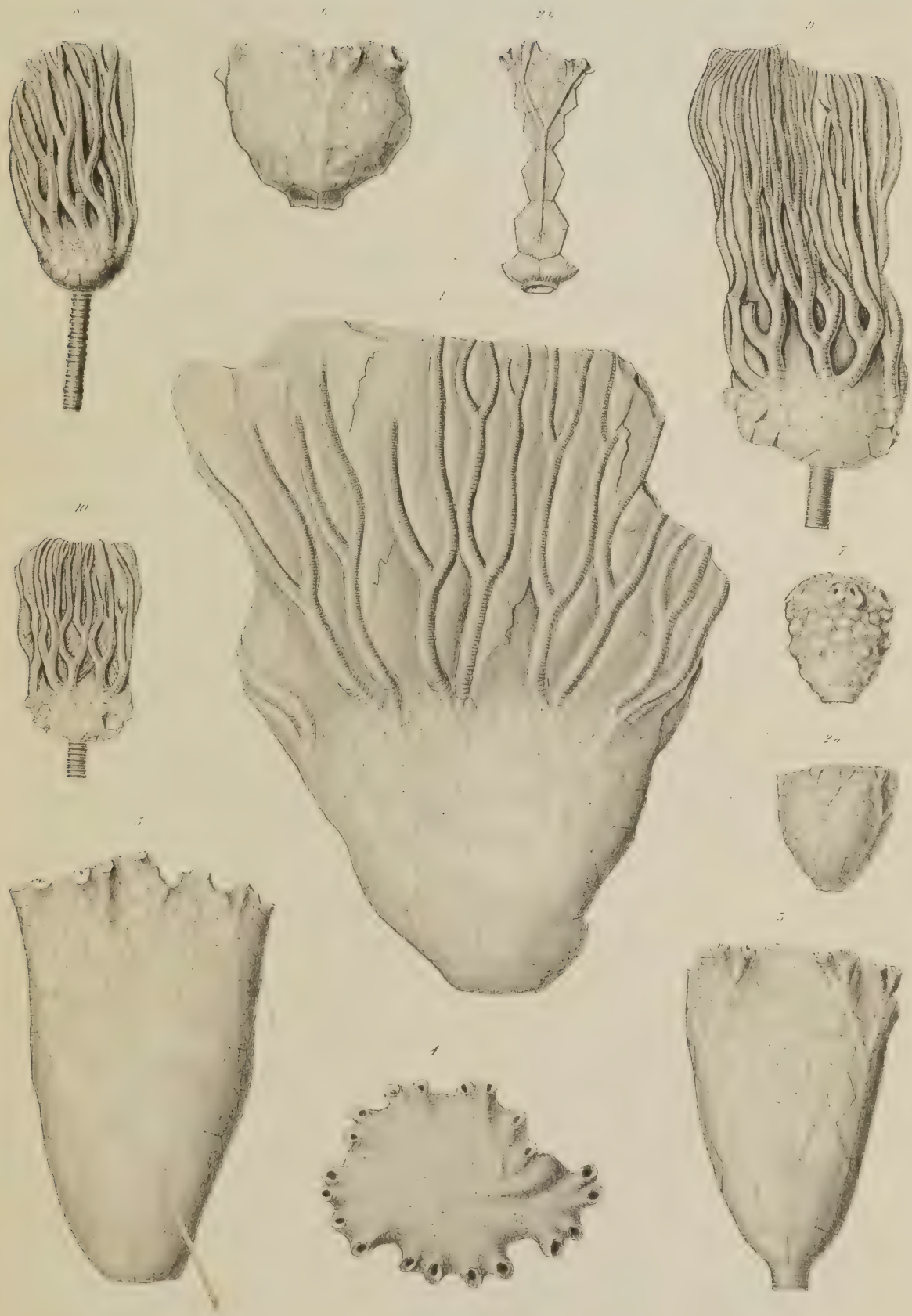


PLATE LII.

	PAGE
ACTINOCRINUS LOBATUS Hall	557
Fig. 1 <i>a</i> . Ventral aspect of a large specimen.	
1 <i>b</i> . Anterior view of the same.	
ACTINOCRINUS VERRUCOSUS Hall	558
2 <i>a</i> . A large specimen with anal tube, and portions of the arms.	
2 <i>b</i> . Posterior view of the calyx.	
2 <i>c</i> . Ventral aspect of the calyx.	
ACTINOCRINUS MULTIRADIATUS Shum.	555
3. Large specimen with arms.	
4 <i>a</i> . Posterior view of the calyx.	
4 <i>b</i> . Ventral aspect of the same specimen.	
5. Lateral view of another specimen.	
6. Another specimen with arms.	
ACTINOCRINUS GRIFFITHI W. and Sp.	568
7. Anterior view of the calyx.	
ACTINOCRINUS TUBERCULOSUS W. and Sp.	573
8 <i>a</i> . Posterior side of the type specimen.	
8 <i>b</i> . The structure at the upper part of the arms.	
8 <i>c</i> . The proximal arm plates (enlarged.)	

(All the specimens in the collection of Wachsmuth and Springer.)

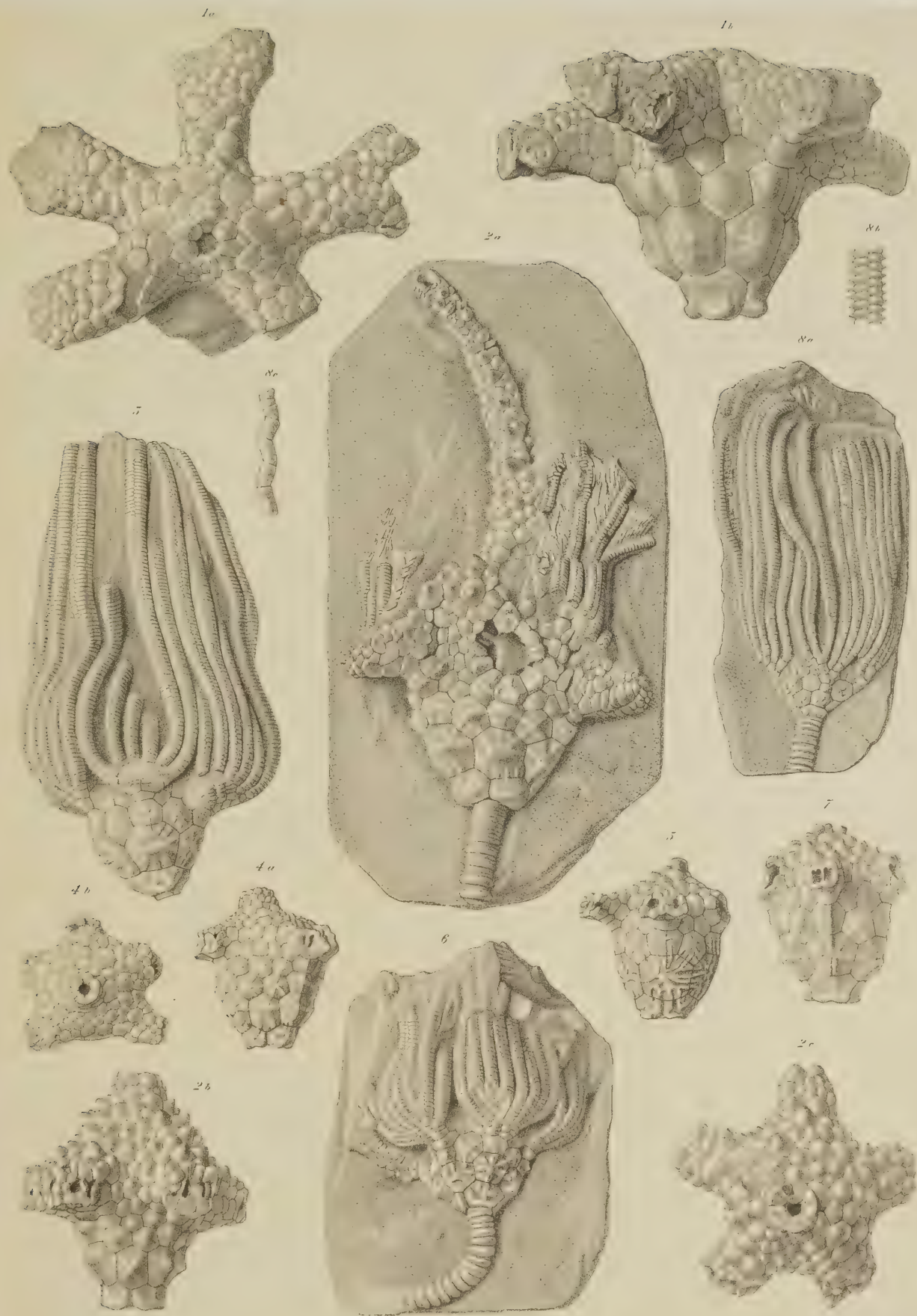


PLATE LIII.

	PAGE
ACTINOCRINUS MULTIRAMOSUS W. and Sp.	564
Fig. 1. A magnificent specimen with arms and anal tube.	
ACTINOCRINUS MAGNIFICUS W. and Sp.	567
2. A very large specimen with arms.	
(Both in the collection of Wachsmuth and Springer.)	

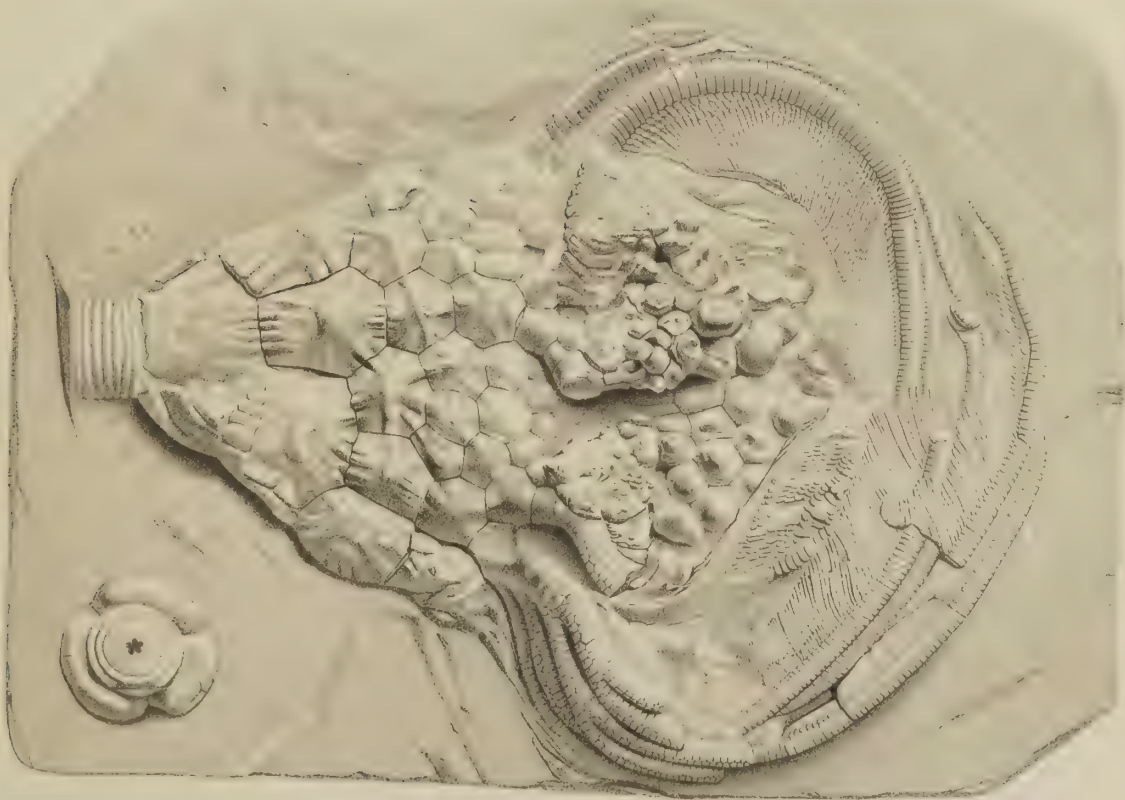
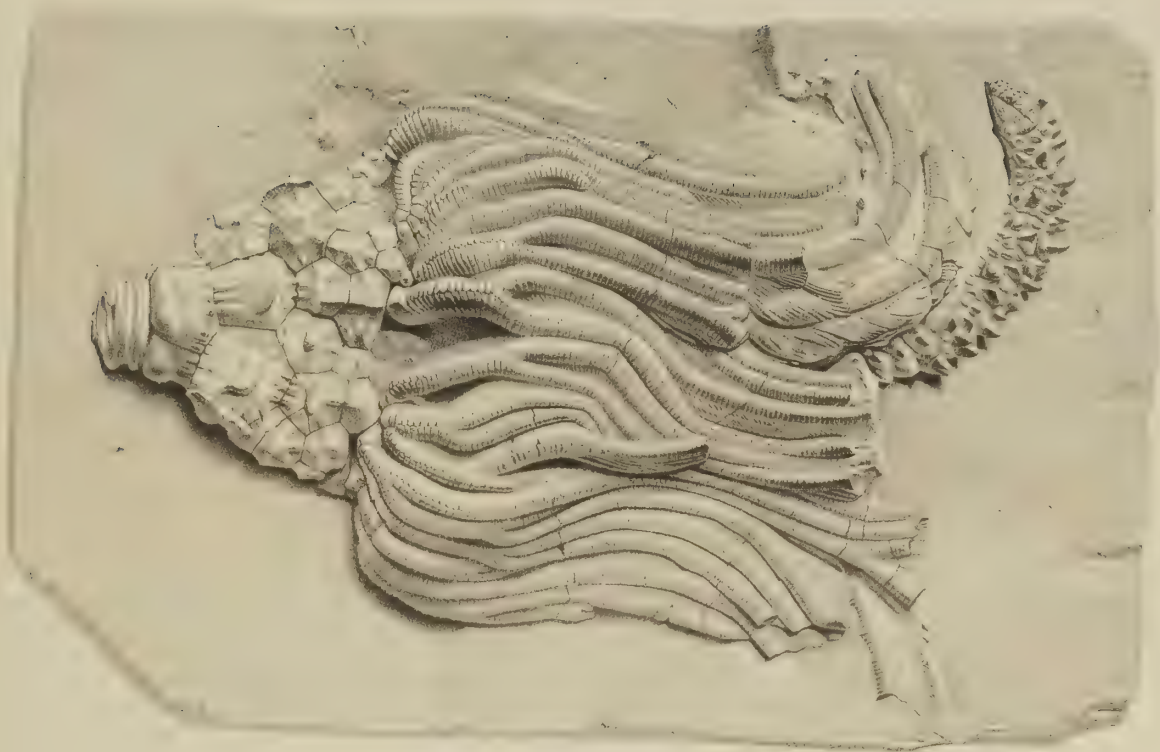


PLATE LIV.

	PAGE
ACTINOCRINUS JUGOSUS Hall	563
Fig. 1. Posterior side of a large calyx. (Coll. L. A. Cox.)	
ACTINOCRINUS LOWEI Hall	562
2. Lateral view of the calyx. (Same collection.)	
ACTINOCRINUS LOBATUS Hall	557
3. Anterior view of a specimen with arms. (Mus. Comp. Zoöl.)	
ACTINOCRINUS TRIJUGIS (S. A. Miller)	576
4a. Posterior view of the calyx. (One of the type specimens; in the Coll. of F. A. Sampson.)	
4b. Ventral aspect of the same specimen.	
CACTOCRINUS GLANS (Hall)	625
5. Posterior view of the calyx. (Coll. W. and Sp.)	
6a. Lateral view of a less nodose specimen. (Same collection.)	
6b. Another view of the same specimen.	
7. Hall's type of <i>Actinocrinus eryx</i> . (Mus. Comp. Zoöl.)	
AMPHORACRINUS VIMINALIS (HALL)	590
8. Specimen with arms. (Coll. W. and Sp.)	



PLATE LV.

	PAGE
ACTINOCRINUS LOBATUS Hall	557
Fig. 1 <i>a</i> . Posterior view of a fine specimen; showing portions of anal tube and arms. (Coll. W. and Sp.)	
1 <i>b</i> . Stem near the calyx.	
ACTINOCRINUS PERNODOSUS Hall	561
2 <i>a</i> . Anterior view of the calyx. (Same collection.)	
2 <i>b</i> . Posterior view of another specimen. (Same collection.)	
ACTINOCRINUS MULTIRAMOSUS W. and Sp.	564
3. The calyx with an <i>Onychaster</i> fastened to the anal tube. (Same collection.)	
ACTINOCRINUS TENUISCUPTUS McChesney	571
4 <i>a</i> . Anterior side of a specimen with arms. (Same collection.)	
4 <i>b</i> . Posterior side of the calyx. (Same collection.)	
ACTINOCRINUS SCITULUS M. and W.	559
5. Anterior side of a specimen with arms. (Same collection.)	
6 <i>a</i> . Side view of the calyx. (Same collection.)	
6 <i>b</i> . Posterior view of the same specimen.	
ACTINOCRINUS ARROSUS (S. A. Miller)	577
7. One of the type specimens. (Coll. F. A. Sampson.)	
8 <i>a</i> . Dorsal aspect of the calyx. (Same collection.)	
8 <i>b</i> . Side view of the same specimen.	
8 <i>c</i> . Ventral aspect of same.	
CACTOCRINUS OBESUS (Keyes)	613
9 <i>a</i> . Side view of the type specimen. (Coll. Missouri Surv.)	
9 <i>b</i> . Ventral aspect of the same. (Coll. W. and Sp.)	
CACTOCRINUS SEXARMATUS (Hall)	615
10. Left postero-lateral side of the dorsal cup. (Coll. W. and Sp.)	
11. Posterior view of the calyx. (Same collection.)	
CACTOCRINUS FOSSATUS (S. A. Miller)	620
12. The type specimen, showing the posterior side of the calyx. (After Miller.)	

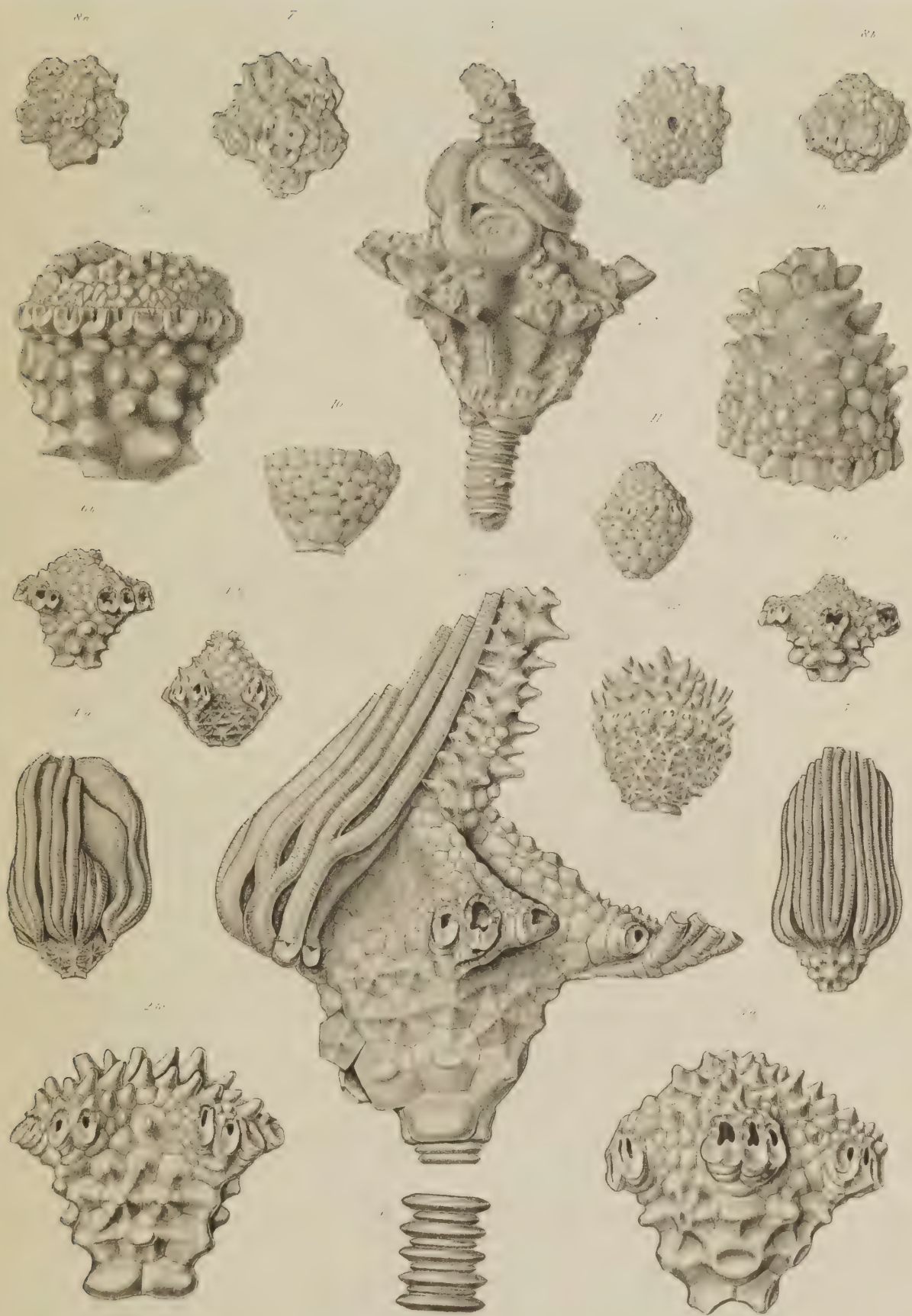


PLATE LVI.

	PAGE
ACTINOCRINUS DAPHNE (Hall)	574
Fig. 1. Posterior view of a large specimen. (Coll. W. and Sp.)	
CACTOCRINUS THALIA (Hall)	604
2. Specimen with arms, described by Hall as <i>Actinocrinus infrequens</i> . (Mus. Comp. Zoöl.)	
CACTOCRINUS THETIS (Hall)	614
3. Posterior view of the calyx and anal tube. (Coll. W. and Sp.)	
4. A large specimen with arms. (Same collection.)	
CACTOCRINUS OPUSCULUS (Hall)	607
5a. Specimen with arms. (Mus. Comp. Zoöl.)	
5b. Calyx, showing the left posterior ray and the anal interradius. (Coll. W. and Sp.)	
CACTOCRINUS MULTIBRACHIATUS (Hall)	617
6. Antero-lateral view of the calyx. (Coll. W. and Sp.)	
7. Posterior view of another specimen. (Same collection.)	
CACTOCRINUS LUCINA (Hall)	603
8. Anterior view of a specimen with arms. (Mus. Comp. Zoöl.)	
9. Posterior side of the calyx; from near Louisiana, Mo., described by Rowley and Hare as <i>Actinocrinus puteatus</i> . (Coll. R. R. Rowley.)	
CACTOCRINUS ECTYPUS (Meek and Worthen)	611
10. Side view of a large specimen. (Coll. W. and Sp.)	
ACTINOCRINUS GRACILIS W. and Sp.	572
11. A specimen with arms ($\frac{1}{2}$). (Mus. Comp. Zoöl.)	

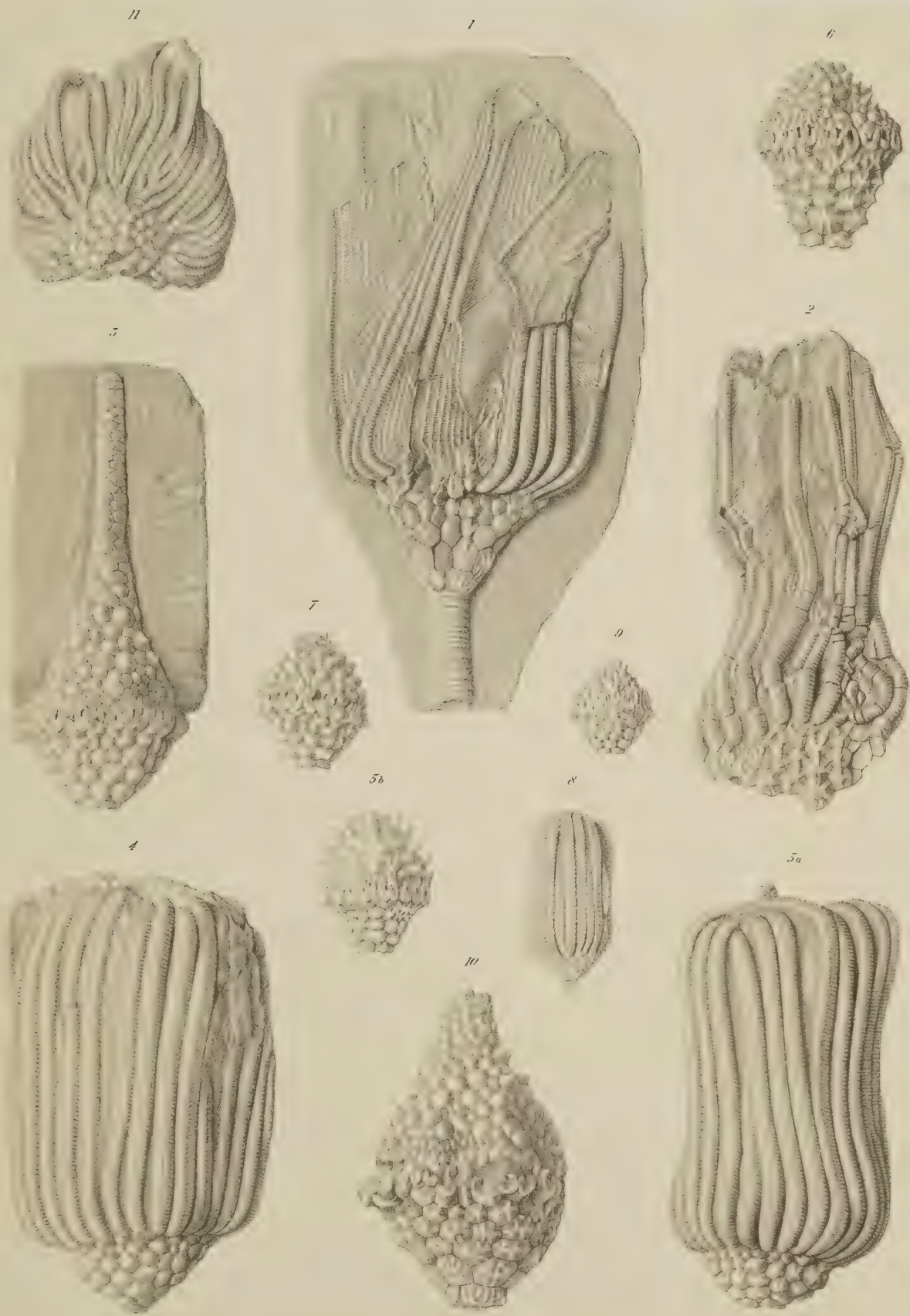


PLATE LVII.

	PAGE
CACTOCRINUS NODOBRACHIATUS W. and Sp.	622
Fig. 1. Posterior side of a fine specimen with arms; the arms incurving and touching the summit of the disk.	
2. Anterior view of another specimen.	
CACTOCRINUS ORNATISSIMUS W. and Sp.	621
3. Posterior view of the type specimen.	
CACTOCRINUS ARNOLDI W. and Sp.	624
4a. Specimen with arms and pinnules (the nodes upon the arms are not preserved.*)	
4b. Side view of the calyx, showing the left antero-lateral ray.	
CACTOCRINUS DENTICULATUS W. and Sp.	606
5a. The type specimen, showing the right posterior ray.	
5b. Portion of an arm from near the upper end (enlarged).	
CACTOCRINUS EXTENSUS W. and Sp.	616
6. Lateral view of the calyx.	
7. Specimen with arms, anal tube, and column.	
CACTOCRINUS LONGUS (Meek and Worthen)	609
8. Anterior view of an unusually fine and large calyx.	
CACTOCRINUS CLARUS (Hall)	612
9. Lateral view of a large dorsal cup with almost smooth plates.	
10. Anterior view of a specimen with ornamented plates.	
CACTOCRINUS RETICULATUS, var. OVATUS (Hall)	606
11. Anterior view of the calyx.	
CACTOCRINUS THALIA (Hall)	604
12. Anterior view of the dorsal cup.	
13. Another specimen, showing the left posterior ray and anal interradius.	
(All the specimens in the collection of Wachsmuth and Springer.)	

* This figure is misleading in giving the appearance of spines to some arm-fragments lying upon the disk.

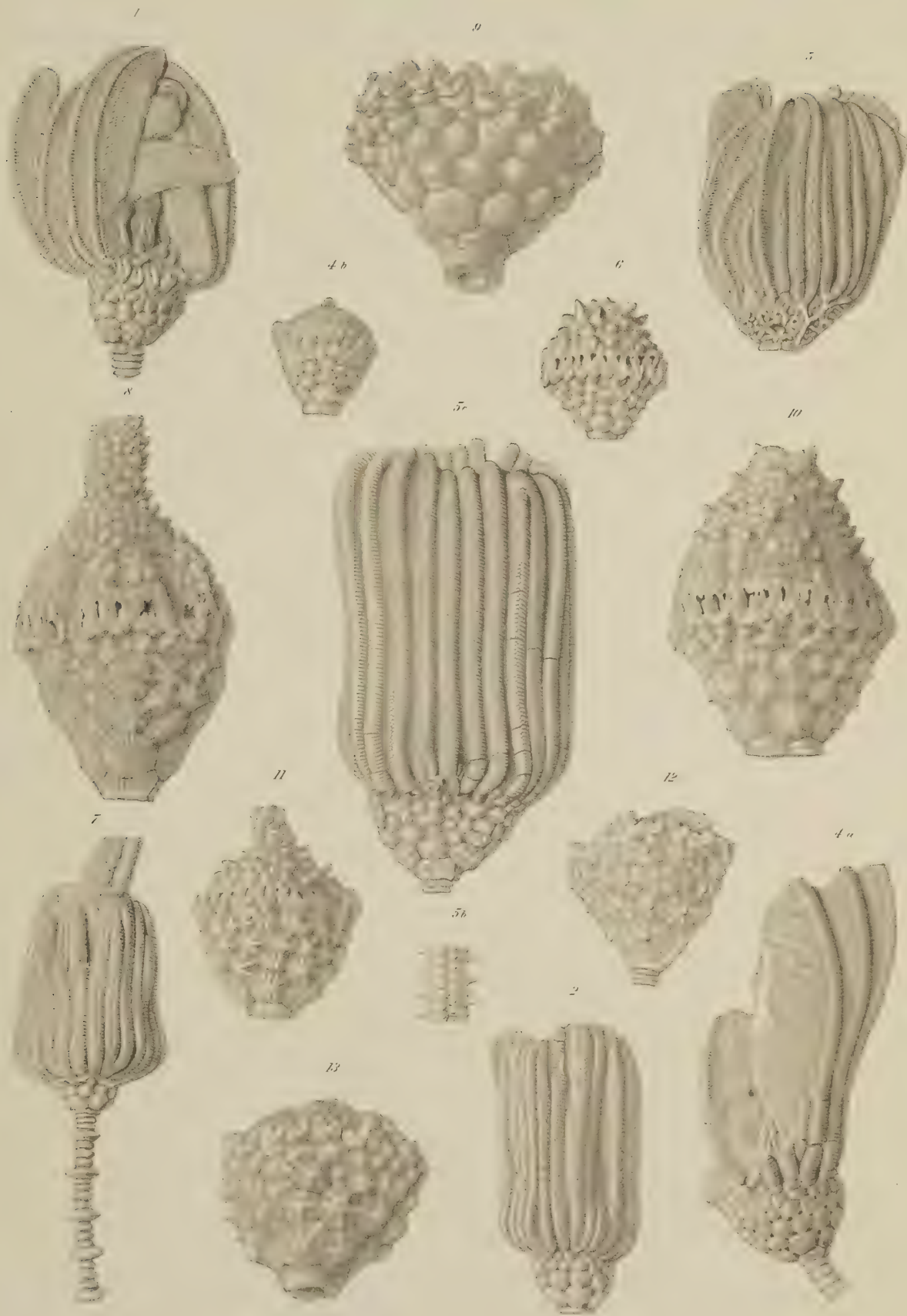


PLATE LVIII.

	PAGE
CACTOCRINUS CLARUS (Hall)	612
Fig. 1. Showing the arm structure, and the arrangement of the hooks along the pinnules.	
CACTOCRINUS RETICULATUS (Hall)	605
2a. Anterior view of the calyx.	
2b. Posterior view of the calyx.	
CACTOCRINUS PROBOSCIDALIS (Hall)	601
3. A large specimen with arms.	
4. Another specimen with arms.	
5. Posterior view of the calyx.	
6. Lateral view of a specimen, showing a portion of the anal tube.	
7a. Portion of an arm, showing the dorsal side of the pinnules and the hooks; the food grooves open at places, and closed at others, $\frac{2}{3}$.	
7b. The ventral side of the pinnules still more enlarged, showing the arrangement of the covering plates and side pieces, and also at intervals the bottom of the food grooves.	
7c. Dorsal aspect of three adjoining pinnules greatly enlarged.	
7d. A single pinnule joint, greatly enlarged.	
CACTOCRINUS MULTIBRACHIATUS (Hall)	617
8. Anterior side of a fine specimen with arms.	
CACTOCRINUS LIMABRACHIATUS (Hall)	608
9. Lateral view of the calyx (one of the rays abnormal, having but one costal).	
10a. Specimen with arms.	
10b. Arm joints, much enlarged.	
(All the specimens in the collection of Wachsmuth and Springer.)	

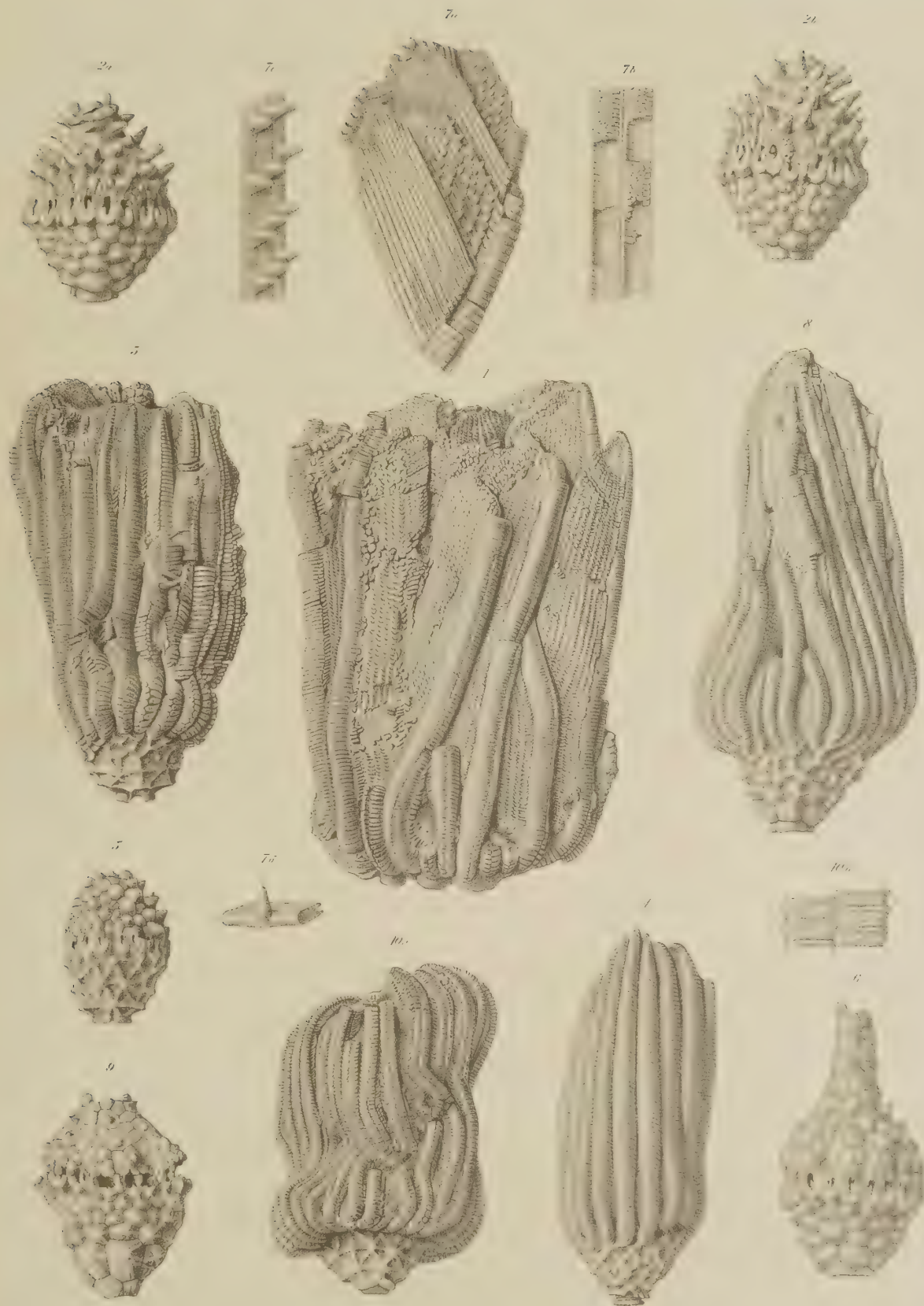


PLATE LIX.

	PAGE
TELEIOCRINUS RUDIS (Hall)	630
Fig. 1. Specimen with arms and stem.	
2. Anterior view of a specimen with arms, anal tube, and stem.	
3. Lateral view of the calyx (a very large specimen).	
TELEIOCRINUS ADOLESCENS W. and Sp.	635
4. Side view of the type specimen.	
TELEIOCRINUS TENUIRADIATUS (Hall)	634
5. Dorsal aspect of a specimen with arms.	
6. Anterior side of a large calyx.	
TELEIOCRINUS UMBROSUS (Hall)	628
7. Portion of the stem.	
CACTOCRINUS CÆLATUS (Hall)	618
8. Lateral view of the calyx; typical form.	
9. Posterior view of a slightly lobed specimen.	
CACTOCRINUS CÆLATUS, var. SPINOTENTACULUS (Hall)	619
10. Anterior view of the calyx.	

(All specimens in the collection of Wachsmuth and Springer.)

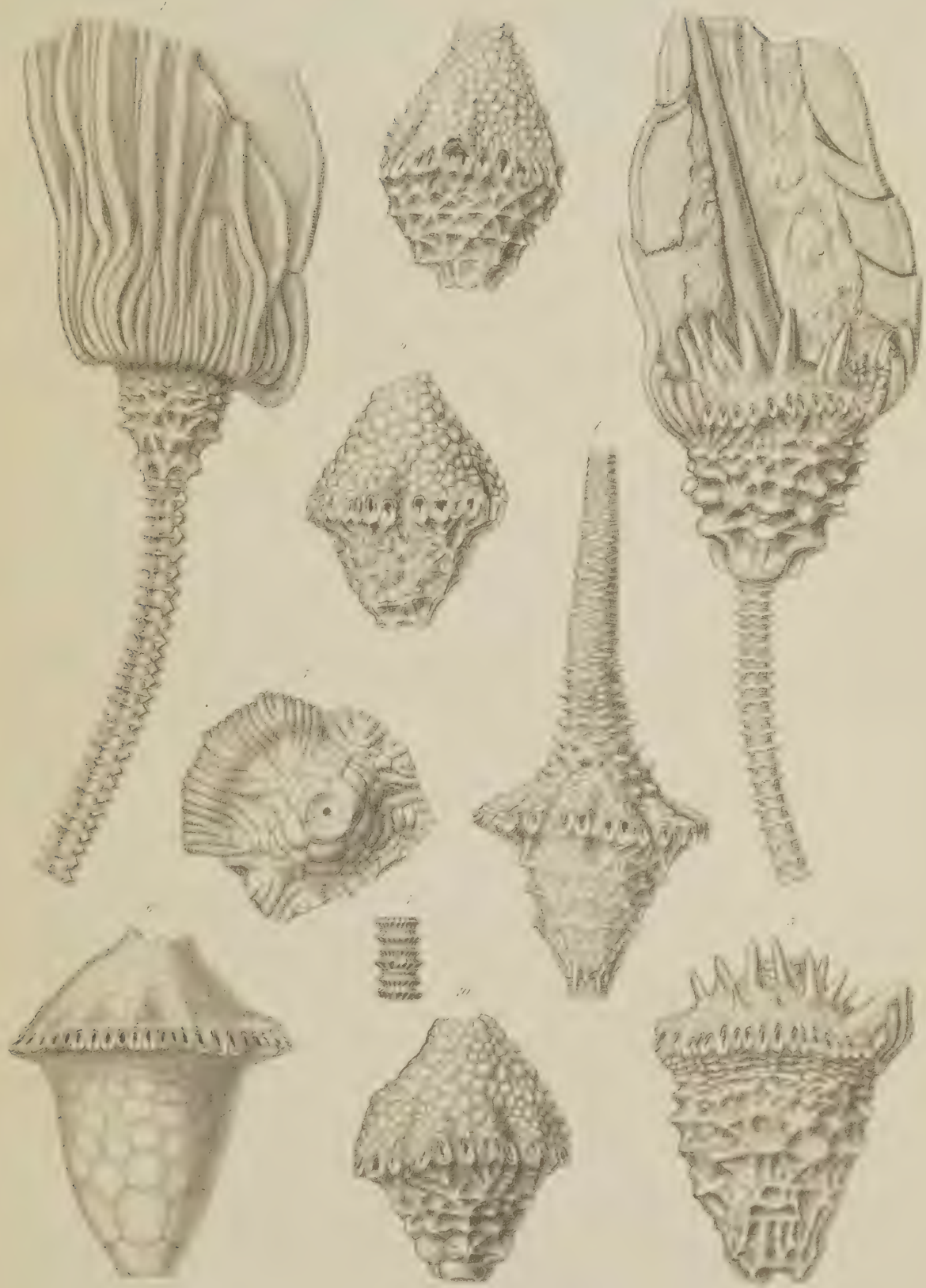


PLATE LX.

	PAGE
STROTOCRINUS GLYPTUS (Hall)	640
Fig. 1 <i>a</i> . Specimen with arms and stem.	
1 <i>b</i> . Posterior view of a very large specimen.	
1 <i>c</i> . Ventral aspect of a natural cast.	
TELEIOCRINUS UMBROSUS (Hall)	628
2 <i>a</i> . A fine specimen with arms and stem.	
2 <i>b</i> . Anterior view of the calyx (typical form).	
2 <i>c</i> . Ventral aspect of another specimen.	
2 <i>d</i> . A very young specimen; the rays free above the distichals.	
TELEIOCRINUS LIRATUS (Hall)	633
3. A large specimen with anal tube and stem.	
TELEIOCRINUS ALTHEA (Hall)	632
4. Anterior view of a large calyx.	
ACTINOCRINUS ASPERRIMUS M. and W.	575
5. Posterior view of the calyx.	
6. Anterior side of the calyx (specimen with unusually strong ridges).	
(All the specimens in the collection of Wachsmuth and Springer.)	

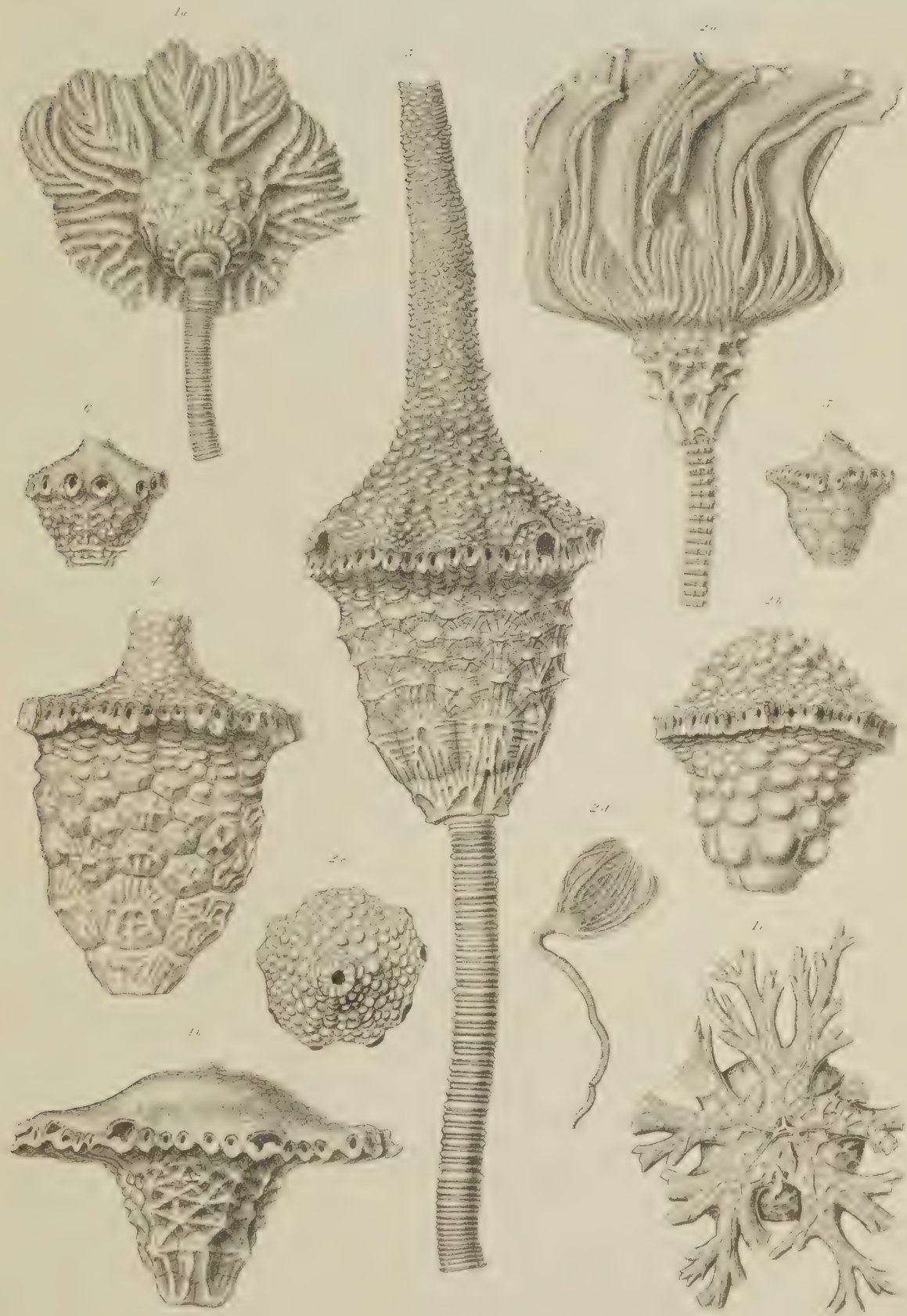


PLATE LXI.

	PAGE
STEGANOCRINUS SCULPTUS (Hall)	583
Fig. 1 <i>a</i> . Posterior view of a large specimen with arms, anal tube, and stem.	
1 <i>b</i> . Lateral view of a very large calyx.	
1 <i>c</i> . Posterior view of another calyx.	
1 <i>d</i> . Young specimen with arms and column.	
1 <i>e</i> . Portion of one of the tubular appendages, showing the bases of the arms ($\frac{1}{2}$).	
1 <i>f</i> . Cross-section of the same ($\frac{1}{2}$).	
STEGANOCRINUS ARANEOLUS M. and W.	581
2 <i>a</i> . Dorsal aspect of a specimen with arms.	
2 <i>b</i> . Lateral view of the calyx, and the lower end of the anal tube.	
STEGANOCRINUS PENTAGONUS (Hall)	579
3 <i>a</i> . Ventral aspect of a specimen, showing portions of the arms.	
3 <i>b</i> . Anterior view of a large calyx.	
3 <i>c</i> . Ventral aspect of the same specimen.	
3 <i>d</i> . Distal face of the first distichal (enlarged).	
3 <i>e</i> . Posterior view of a smaller specimen with more regularly arranged covering pieces.	
4 <i>a</i> . Posterior view of a specimen from New Mexico.	
4 <i>b</i> . Ventral aspect of the same specimen.	
STEGANOCRINUS CONCINNUS (Shumard)	582
5 <i>a</i> . Lateral view of the calyx.	
5 <i>b</i> . Ventral aspect of a small specimen.	
STEGANOCRINUS GLOBOSUS W. and Sp.	585
6. Lateral view of the type specimen.	

(All specimens in the collection of Wachsmuth and Springer.)

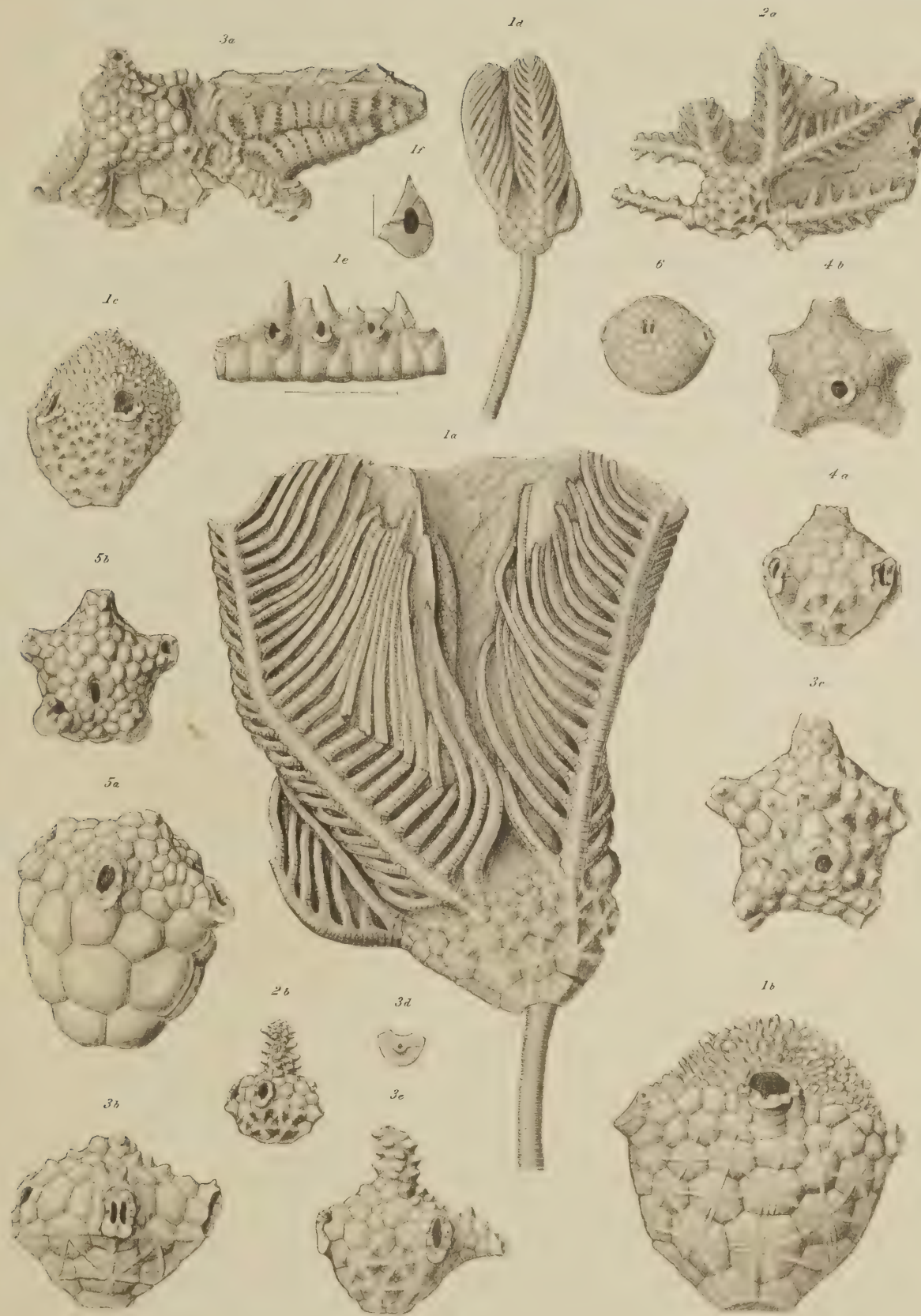


PLATE LXII.

	PAGE
AMPHORACRINUS SPINOBRACHIATUS (Hall)	591
Fig. 1. Dorsal aspect of a specimen with a portion of the arms.	
2. Side view of a specimen with arms.	
3. Lateral view of the calyx.	
4. Dorsal aspect of the calyx, showing the ornamentation.	
AMPHORACRINUS DIVERGENS (Hall)	588
5. Dorsal aspect of a somewhat distorted specimen with arms.	
6 <i>a</i> . Dorsal aspect of a fine specimen with spreading arms.	
6 <i>b</i> . A forked oral spine of this specimen.	
7 <i>a</i> . Posterior view of a fine specimen, showing the arms and spines surrounding the anus. (The specimen was described by Meek and Worthen as <i>A. divergens</i> , var. <i>multiramosus</i> .)	
7 <i>b</i> . Ventral aspect of the same specimen, showing the oral and anal spines.	
8 <i>a</i> . Side view of a very small specimen, showing the oral spines.	
8 <i>b</i> . Dorsal aspect of the same specimen.	
8 <i>c</i> . Ventral aspect of the same, showing the oral and anal spines.	
9. Posterior view of the calyx.	
10. Lateral view of the calyx, showing lower part of anal tube.	

(Figs. 5, 7*a*, and 7*b* were made from specimens in the collection of the Mus. Comp. Zoöl.; the others are in the collection of Wachsmuth and Springer.)



PLATE LXIII.

	PAGE
PHYSETOCRINUS ORNATUS (Hall)	597
Fig. 1. Antero-lateral view of a specimen with arms. (Coll. W. and Sp.)	
2. Posterior view of the calyx. (Same collection.)	
3. Ventral aspect, showing annular impression made by a <i>Capula</i> , which covered the anal opening. (Same collection.)	
4. Anterior view of a large, slightly crushed specimen. (Same collection.)	
PHYSETOCRINUS COPEI (Miller)	598
5. Side view of large specimen. (Same collection.)	
PHYSETOCRINUS VENTRICOSUS (Hall)	593
6. Type of the variety <i>internodius</i> Hall. (Mus. Comp. Zoöl.)	
PHYSETOCRINUS ASPER Meek and Worthen	596
7 <i>a</i> . Posterior view of the type specimen. (Mus. Comp. Zoöl.)	
7 <i>b</i> . Ventral aspect of the same.	
PHYSETOCRINUS LOBATUS W. and Sp.	599
8 <i>a</i> . Side view of the calyx. (Coll. W. and Sp.)	
8 <i>b</i> . Ventral aspect of the calyx. (Same collection.)	
TELEIOCRINUS ALTHEA (Hall)	632
9. Lateral view of the type specimen. (Mus. Comp. Zoöl.)	

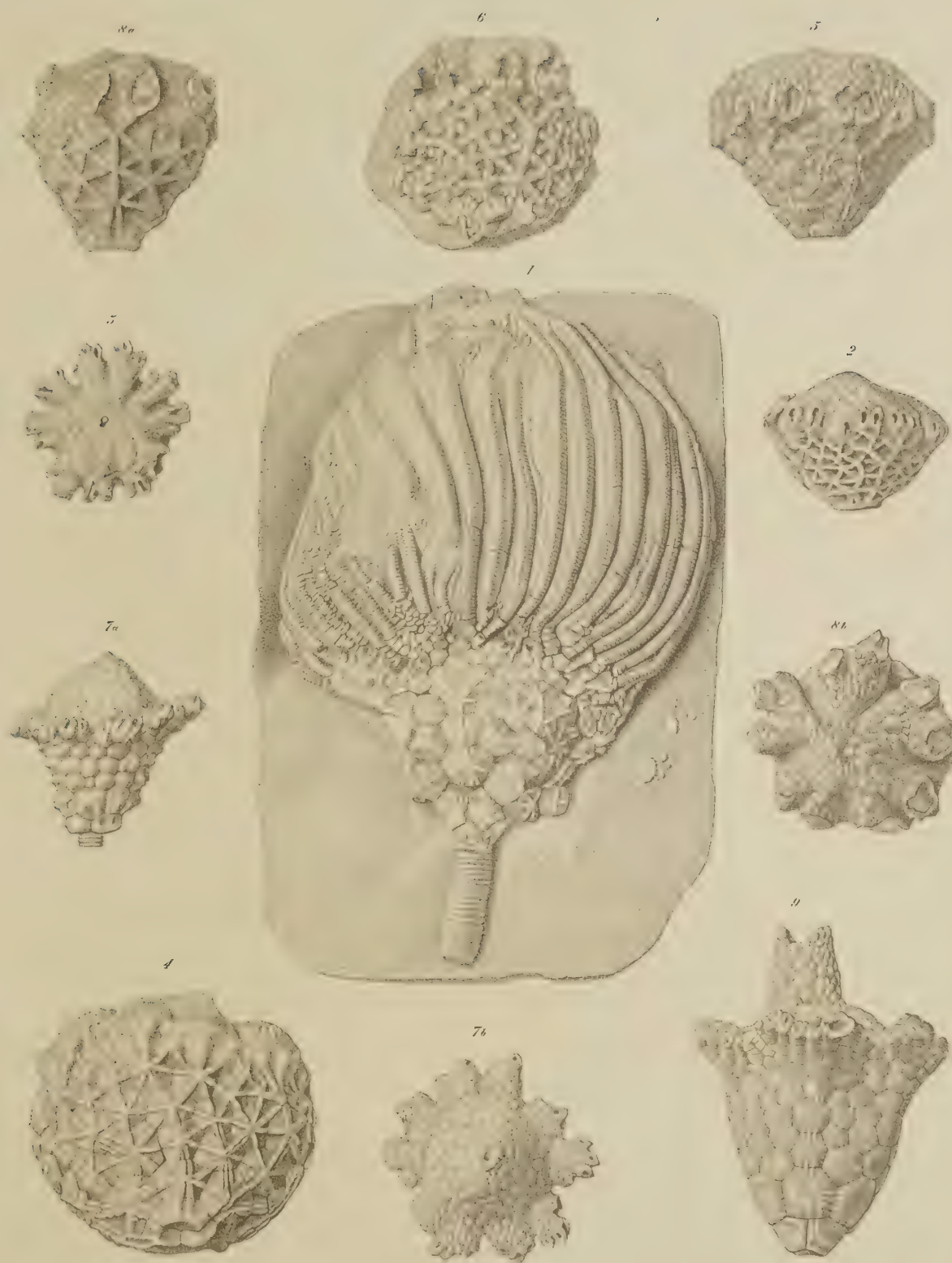


PLATE LXIV.

	PAGE
PHYSETOCRINUS VENTRICOSUS (Hall)	593
Fig. 1. Specimen with arms, stem, and root.	
2. Lateral view of the calyx.	
3. Anterior view of the calyx.	
4. Posterior view of a small elongate specimen.	
5. Dorsal aspect of a depressed specimen of Hall's variety " <i>Actinocrinus</i> " <i>reticulatus</i> .	
6. Anterior view of the calyx.	
7. Anterior view of a specimen of the type of McChesney's " <i>Actinocrinus</i> " <i>subventricosus</i> .	
8 <i>a</i> . Specimen from the Lower Burlington limestone.	
8 <i>b</i> . Ventral aspect of the same specimen.	
PHYSETOCRINUS DILATATUS M. and W.	595
9. The type specimen. (After Meek and Worthen.)	
10. Dorsal aspect of another specimen.	

(All specimens, except Fig. 9, in the collection of Wachsmuth and Springer.)

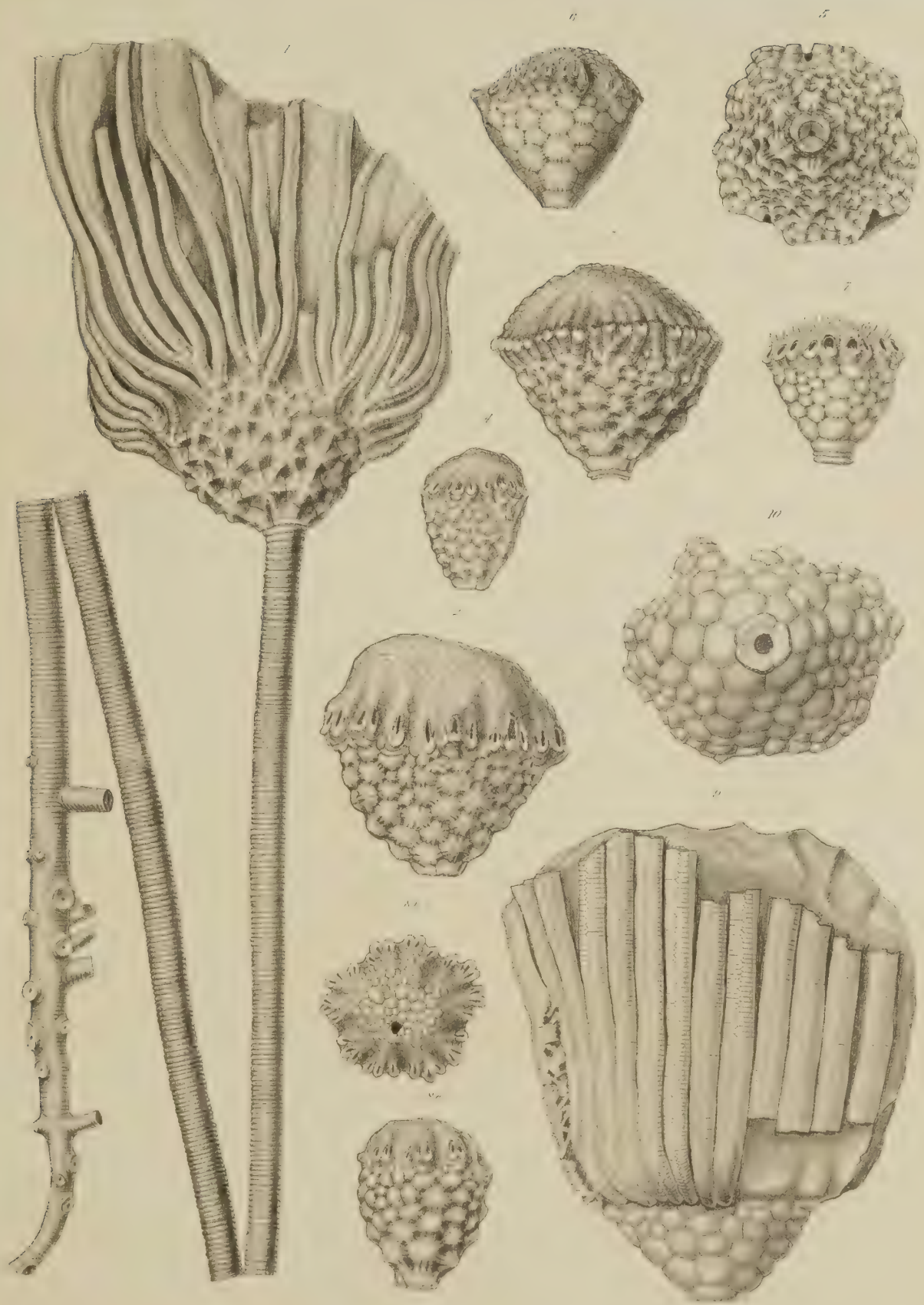


PLATE LXV.

	PAGE
STROTOCRINUS REGALIS (Hall)	638
Fig. 1 <i>a</i> . Lateral view of the calyx.	
1 <i>b</i> . Half of a ray to the fifth bifurcation, drawn from a large specimen.	
1 <i>c</i> . The extended rim of a large specimen, having portions of the dorsal cup broken away, exposing the subtegmina galleries at the inner floor of the tegmen, and the grooves passing out from the centre and diverging to the arms.	
1 <i>d</i> . Specimen showing the outer face of the tegmen.	
STROTOCRINUS GLYPTUS (Hall)	640
2 <i>a</i> . Dorsal aspect of a medium sized specimen.	
2 <i>b</i> . Tegmen of another specimen.	

(All specimens in the collection of Wachsmuth and Springer.)

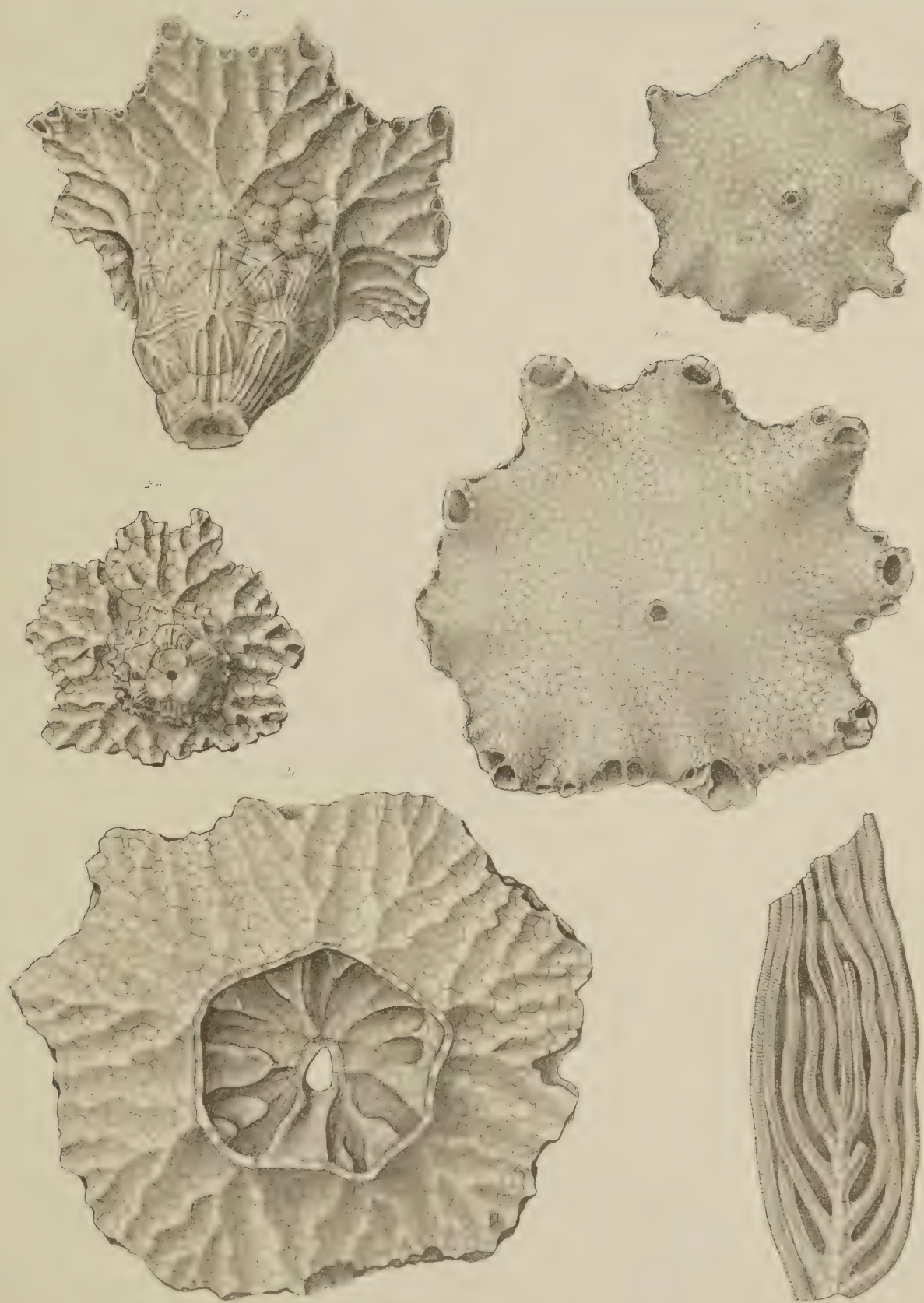


PLATE LXVI.

	PAGE
PLATYCRINUS HEMISPHERICUS M. and W.	703
Fig. 1 <i>a</i> . Specimen showing arms and stem.	
1 <i>b</i> . Dorsal aspect of another specimen with arms spreading, and a <i>Platyceras</i> <i>infundibulum</i> covering anal opening.	
1 <i>c</i> . Lateral view of the calyx; also a <i>Platyceras infundibulum</i> attached.	
1 <i>d</i> . Ventral aspect of another specimen.	
PLATYCRINUS SUBSPINULOSUS Hall	684
2 <i>a</i> . Lateral view of the dorsal cup; a very large specimen.	
2 <i>b</i> . Base of the same specimen.	
PLATYCRINUS VERRUCOSUS White	705
3 <i>a</i> . Lateral view of the dorsal cup.	
3 <i>b</i> . Dorsal aspect of the same.	
PLATYCRINUS EXCAVATUS Hall	718
4. A specimen with arms. (The figure does not show sufficiently the abrupt depressions on the radials just below their facets.)	
PLATYCRINUS NODO-STRIATUS W. and Sp.	698
5 <i>a</i> . Dorsal aspect.	
5 <i>b</i> . Side view of a somewhat depressed specimen.	
PLATYCRINUS YANDELLI O. and Sh.	706
6 <i>a</i> . Dorsal aspect of a specimen with arms.	
6 <i>b</i> . Posterior view of calyx.	
6 <i>c</i> . Ventral aspect of the same specimen.	
PLATYCRINUS SPINIFER W. and Sp.	708
7. The type specimen with arms.	
PLATYCRINUS ORNIGRANULUS McChesney	701
8. A specimen with arms.	
PLATYCRINUS SUBSPINOSUS Hall	717
9 <i>a</i> . Dorsal aspect of a perfect specimen with arms. (Mus. Comp. Zool.)	
9 <i>b</i> . Ventral aspect of the calyx.	
PLATYCRINUS DISCOIDEUS O. and Sh.	713
10 <i>a</i> . Dorsal aspect of a specimen with arms, the outer parts of the latter slightly restored in two rays.	
10 <i>b</i> . Ventral aspect of the calyx.	
10 <i>c</i> . Posterior side of the same specimen.	

(All specimens, except Fig. 9*a*, in the collection of Wachsmuth and Springer.)

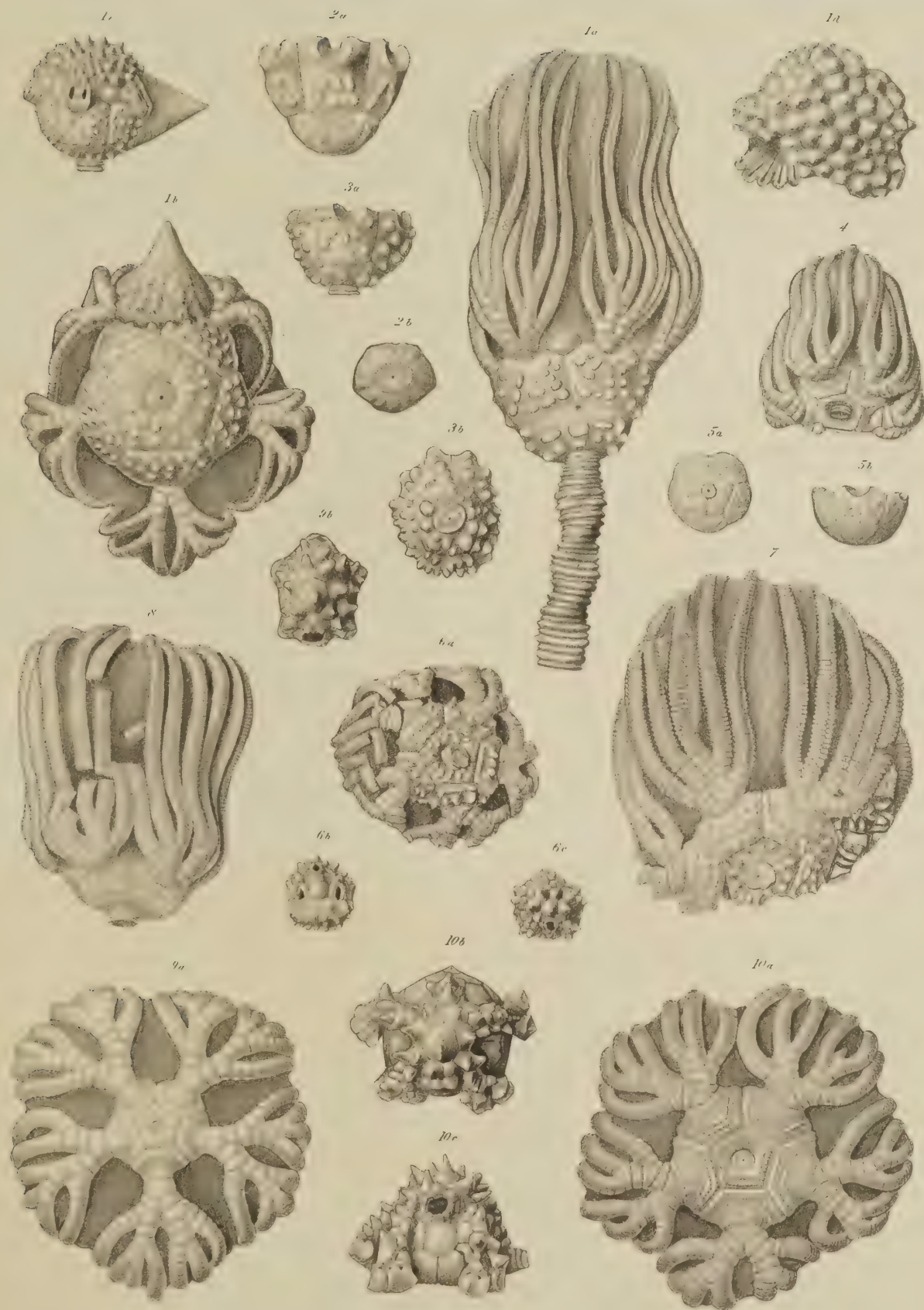


PLATE LXVII.

	PAGE
PLATYCRINUS SAFFORDI Hall	694
Fig. 1. A fine specimen with arms and column, from Indian Creek, Ind. (Coll. W. and Sp.)	
2. Side view of the calyx. (Same collection.)	
3. Dorsal cup of a specimen from Burlington. (Same collection.)	
PLATYCRINUS GLYPTUS M. and W.	693
4. Specimen with arms and column. (Coll. W. and Sp.)	
5. Dorsal cup of a large, elongate specimen. (Same collection.)	
PLATYCRINUS INCOMPTUS White	664
6. A young specimen with arms, showing the numerous bifurcations of the rays, and a faint rugose ornamentation.	
PLATYCRINUS SPINIFER, var. ELONGATUS W. and Sp.. . . .	709
7. Lateral view of the calyx, showing portions of the arms. (Same collection.)	
PLATYCRINUS CAVUS Hall	715
8 <i>a</i> and <i>b</i> . Dorsal cup of two specimens. (Same collection.)	
PLATYCRINUS WORTHENI Hall	702
9. The type specimen. (Illinois State collection.)	
PLATYCRINUS GEOMETRICUS W. and Sp.	697
10. The type specimen. (Mus. Comp. Zoöl.)	
PLATYCRINUS TRUNCATULUS Hall	675
11 <i>a</i> . Side view of the calyx, showing the bases of the arms (enlarged).	
11 <i>b</i> . Side view of another specimen.	



PLATE LXVIII.

	AGE
PLATYCRINUS VERRUCOSUS White	705
Fig. 1 <i>a</i> . The type specimen. (Mus. Comp. Zoöl.)	
1 <i>b</i> . Oblique view of the dorsal cup. (Coll. W. and Sp.)	
1 <i>c</i> . Another specimen; dorsal aspect of the calyx. (Same collection.)	
1 <i>d</i> . Lateral aspect of a variety from New Mexico, showing the anal opening. (Same collection.)	
 PLATYCRINUS POCILLIFORMIS Hall	 706
2 <i>a</i> . Lateral aspect of the dorsal cup (the ornamentation from another specimen). (Coll. W. and Sp.)	
2 <i>b</i> . Base of a specimen with larger nodes. (Coll. W. and Sp.)	
 PLATYCRINUS YANDELLI O. and Sh.	 706
3 <i>a</i> . Dorsal aspect of the calyx; a very mature specimen. (Same collection.)	
3 <i>b</i> . Ventral aspect of the same specimen.	
3 <i>c</i> . Posterior view of same.	
 PLATYCRINUS YANDELLI, var. PERASPER	 708
4 <i>a</i> . Lateral view of a specimen with arms. (Mus. Comp. Zoöl.)	
4 <i>b</i> . Dorsal aspect of the same specimen (the stem removed).	
 PLATYCRINUS SCULPTUS Hall	 691
5. Specimen from New Mexico, lateral view of the calyx. (Coll. W. and Sp.)	
 PLATYCRINUS PARVINODUS Hall	 696
6 <i>a</i> . Side view of the type, the specimen somewhat flattened. (Mus. Comp. Zoöl.)	
6 <i>b</i> . Anterior view of another specimen less distorted. (Coll. W. and Sp.)	
 PLATYCRINUS PECULIARIS W. and Sp.	 700
7 <i>a</i> . Posterior view of the calyx; the nodes partly eroded by weathering. (Coll. W. and Sp.)	
7 <i>b</i> . Ventral aspect of the same specimen.	
 PLATYCRINUS GEOMETRICUS W. and Sp.	 697
8. Another type specimen. (Coll. W. and Sp.)	

	PAGE
PLATYCRINUS ASPER M. and W.	690
Fig. 9 <i>a</i> . The type specimen. (Mus. Comp. Zoöl.)	
9 <i>b</i> . Basal view of another specimen. (Mus. Comp. Zoöl.)	
PLATYCRINUS ORNIGRANULUS McCh.	701
10 <i>a</i> . A fine specimen with arms, representing the typical form. (Mus. Comp. Zoöl.)	
10 <i>b</i> . Dorsal aspect of a very short calyx; showing the ornamentation. (Coll. W. and Sp.)	
10 <i>c</i> . A costal and two pairs of distichals.	
11 <i>a</i> . A specimen with coarser ornamentation. (Same collection.)	
11 <i>b</i> . A specimen with a somewhat different ornamentation. (Same collection.)	
12 <i>a</i> . A young specimen. (Coll. W. and Sp.)	
12 <i>b</i> . A still smaller specimen ($\frac{1}{2}$). (Same collection.)	
PLATYCRINUS EMINULUS Hall.	712
13 <i>a</i> . Anterior view of calyx. (Mus. Comp. Zoöl.)	
13 <i>b</i> . Posterior view of another specimen. (Same collection.)	
13 <i>c</i> . Ventral aspect of the calyx. (Coll. W. and Sp.)	
PLATYCRINUS SCOBINA M. and W.	695
14 <i>a</i> . The type specimen. (Mus. Comp. Zoöl.)	
14 <i>b</i> . Dorsal aspect of the calyx. (Coll. W. and Sp.)	
PLATYCRINUS GORBYI S. A. Miller.	716
15. Dorsal aspect of the calyx. (Mus. Comp. Zoöl.)	

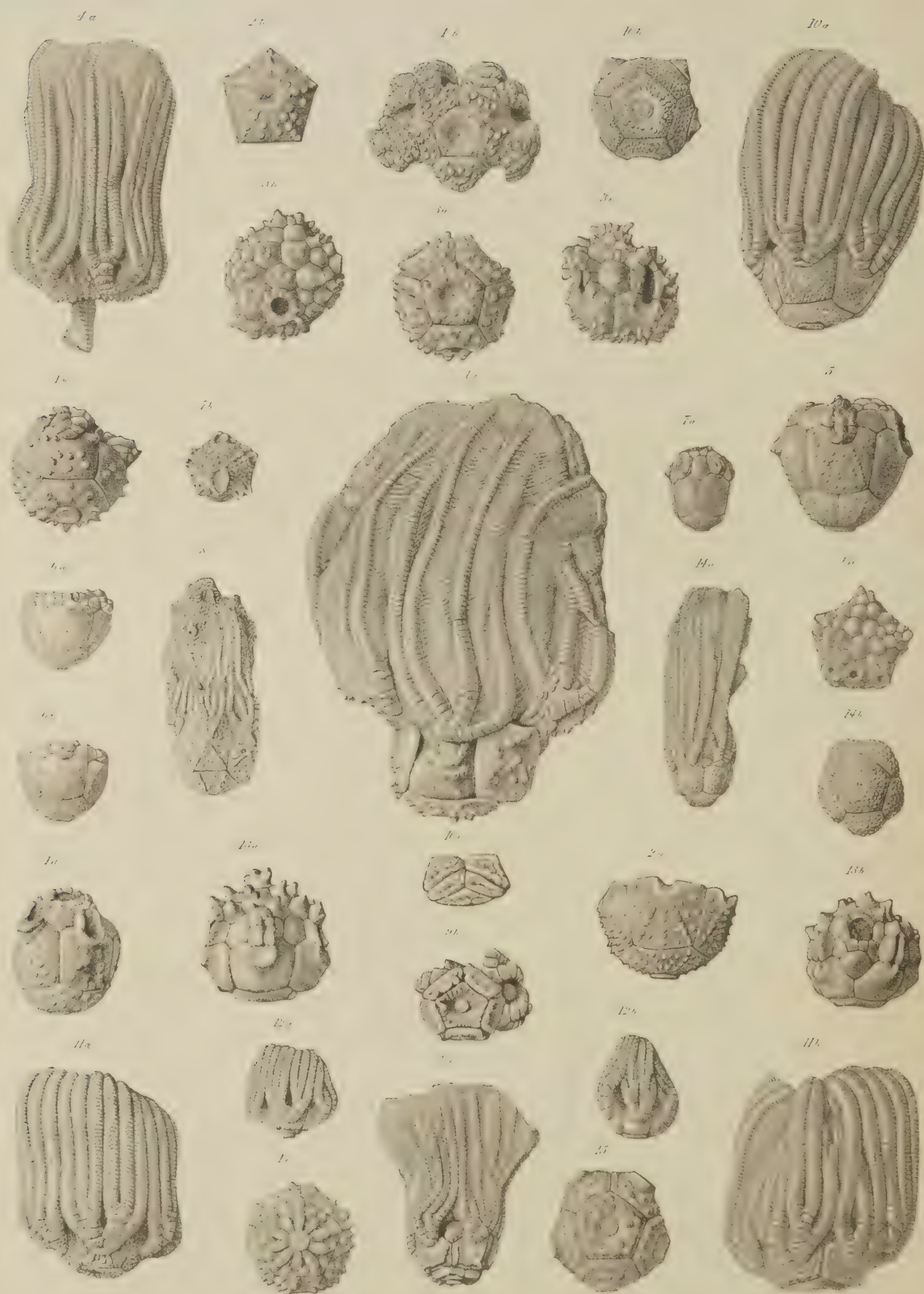


PLATE LXIX.

	PAGE
PLATYCRINUS SYMMETRICUS W. and Sp.	655
Fig. 1 <i>a</i> . Specimen with arms and column.	
1 <i>b</i> . Ventral aspect of the calyx; a large specimen.	
1 <i>c</i> . Ventral aspect of a young specimen; the orals almost symmetrical.	
PLATYCRINUS PLANUS O. and Sh.	668
2 <i>a</i> . A large specimen with arms.	
2 <i>b</i> . Lateral view of the dorsal cup.	
2 <i>c</i> . A portion of the arms enlarged.	
2 <i>d</i> . A young specimen, apparently of this species.	
PLATYCRINUS BURLINGTONENSIS O. and Sh.	653
3 <i>a</i> . A medium sized specimen with arms. (After Meek and Worthen.)	
3 <i>b</i> . Lateral view of a large calyx.	
3 <i>c</i> . Ventral aspect of another large specimen, showing the anal tube.	
3 <i>d</i> . Posterior view of a smaller specimen.	
3 <i>e</i> . Ventral aspect of another small specimen.	
3 <i>f</i> . Dorsal cup of a young specimen. (Inadvertently drawn with left antero-lateral interradius at the top.)	
3 <i>g</i> . A very young specimen with zigzag arms, composed of single joints.	
3 <i>h</i> . Portion of an arm showing the lateral processes (enlarged).	
3 <i>i</i> . Portion of an arm in a dorsal aspect (enlarged).	
PLATYCRINUS AGASSIZI W. and Sp.	669
4. A very large specimen with arms.	
PLATYCRINUS PILEIFORMIS Hall	656
5. A specimen with arms (slightly restored).	
PLATYCRINUS BONÆNSIS White	683
6. A specimen having six arms to the ray.	
PLATYCRINUS SARÆ Hall	677
7. The type specimen. (After Hall.) Somewhat flattened.	
(All specimens in the collection of Wachsmuth and Springer, except that of 3 <i>a</i> , which is in the Museum of Comparative Zoölogy, and Fig. 7, which is in the Illinois State Museum.)	

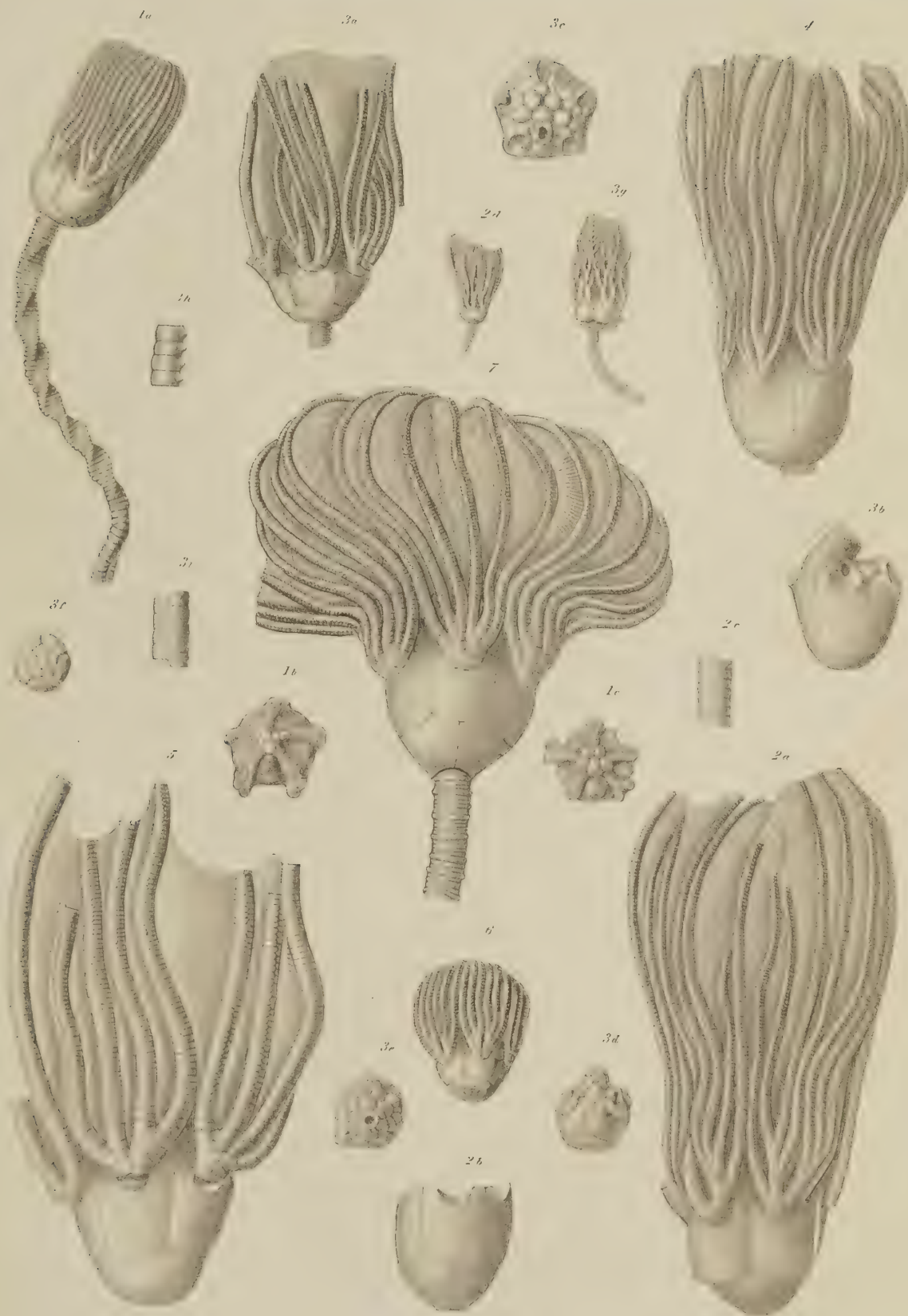


PLATE LXX.

	PAGE
PLATYCRINUS SARÆ Hall	677
Fig. 1. Specimen with faintly ornamented plates.	
PLATYCRINUS NODO-STRIATUS W. and Sp.	698
3. Specimen with six to the ray, the most frequent number.	
4a. Lateral view of the calyx; an older specimen.	
4b. Anal side of the same specimen.	
4c. Ventral aspect of same.	
PLATYCRINUS BREVINODUS Hall	688
2. Specimen from the upper part of the Burlington limestone; with column, root, and four arms to the ray.	
5. Specimen from same horizon with six arms to the ray.	
6a and b. Two specimens from the Keokuk group of Indian Creek, Ind.	
PLATYCRINUS TENUIBRACHIATUS Meek and Worth.	687
7. A specimen with arms.	
8. Another specimen, slightly differing in ornamentation.	
PLATYCRINUS SUBSPINULOSUS Hall	684
9. A highly ornamented calyx.	
PLATYCRINUS SAMPSONI S. A. Miller	673
10. Lateral view of the calyx.	
PLATYCRINUS PRATTENI Worthen	671
11. A specimen with arms.	
12. The basal disk.	
PLATYCRINUS PILEIFORMIS Hall	656
13a. Lateral view of the calyx.	
13b. Posterior side of the calyx.	
PLATYCRINUS DAVISI W. and Sp.	684
14. Lateral view of the type specimen.	

(All the specimens in the collection of Wachsmuth and Springer.)

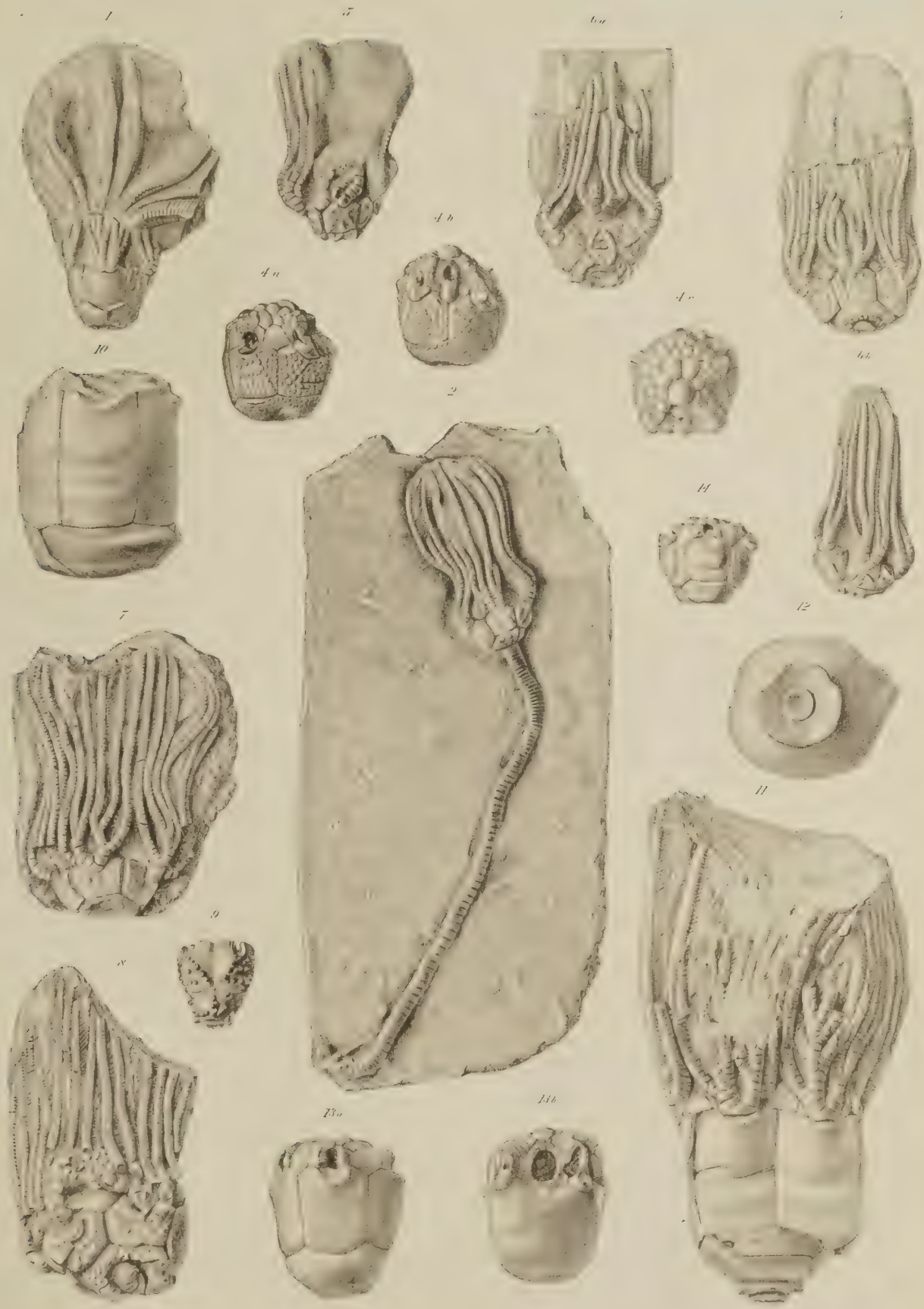




PLATE LXXI.

	PAGE
PLATYCRINUS INCOMPTUS White	664
Fig. 1. A very large specimen, showing the numerous ramifications of the arms. (Coll. W. and Sp.)	
2. A small specimen, showing the same. (Same collection.)	
3. The type specimen. (Mus. Comp. Zool.)	
PLATYCRINUS ÆQUALIS Hall	674
4a. A very large specimen with arms. (Same collection.)	
4b. Portion of an arm (enlarged).	
5. The calyx, showing the radial facets and the small first costal. (Coll. W. and Sp.)	
PLATYCRINUS LODENSIS Hall and Whitf.	666
6. The type specimen. (After Hall and Whitfield.)	
PLATYCRINUS GRAPHICUS Hall and Whitf.	672
7. The type specimen. (After Hall and Whitfield.)	
PLATYCRINUS CONTRITUS Hall and Whitf.	667
8. The type specimen. (After Hall and Whitfield.)	
PLATYCRINUS NIOTENSIS Meek and Worthen	682
9. Specimen with arms (from Indiana).	
PLATYCRINUS BRITTSI S. A. Miller	659
10. The type specimen. (Coll. F. A. Sampson, Sedalia).	
PLATYCRINUS CORBULIFORMIS Rowley and Hare	657
11a. Dorsal cup in a side view.	
11b. Dorsal aspect of the same specimen. (Coll. R. R. Rowley.)	
PLATYCRINUS ÆQUITERNUS S. A. Miller	658
12. The type specimen. (Coll. F. A. Sampson.)	
PLATYCRINUS PISUM Rowley and Hare	660
13a. The type specimen; posterior view. (Coll. R. R. Rowley.)	
13b. Dorsal aspect of same.	

	PAGE
PLATYCRINUS QUINQUENODUS White	661
Fig. 14 <i>a</i> . The type specimen; lateral view of calyx. (Mus. Comp. Zoöl.)	
14 <i>b</i> . Ventral aspect of same.	
14 <i>c</i> . Dorsal aspect of same.	
PLATYCRINUS INSOLENS Rowley and Hare	659
15. The type specimen. (Coll. R. R. Rowley.)	
PLATYCRINUS PECULIARIS W and Sp.	700
16. The type, a rather large example. (Coll. W. and Sp.)	
PLATYCRINUS ALLOPHYLUS S. A. Miller	685
17. The type specimen. (Coll. F. A. Sampson.)	
PLATYCRINUS TRUNCATULUS Hall	675
18 <i>a</i> . Dorsal aspect of the calyx. (Coll. W. and Sp.)	
18 <i>b</i> . Side view of the dorsal cup.	

PLATE LXXII.

	PAGE
PLATYCRINUS REGALIS Hall	710
<div style="display: flex; justify-content: space-between;"> Fig. 1. Specimen with arms, stem, and root. The calyx of this specimen is much distorted by pressure, and the surface ornamentation obscure, so that in some of the characters it gives an incorrect impression, and does not represent a typical example of the species. (Coll. W. and Sp.) </div>	
<div style="display: flex; justify-content: space-between;"> 2. The type specimen. (Mus. Comp. Zool.) </div>	
EUCLADOCRINUS TUBEROSUS (Hall)	728
<div style="display: flex; justify-content: space-between;"> 3. Specimen, showing the small branching arms given off from the tubular appendages. (Coll. W. and Sp.) </div>	
<div style="display: flex; justify-content: space-between;"> 4a. Posterior side of the calyx. (Same collection.) </div>	
<div style="display: flex; justify-content: space-between;"> 4b. Dorsal aspect of the same specimen. </div>	
<div style="display: flex; justify-content: space-between;"> 4c. Ventral aspect of same. </div>	
EUCLADOCRINUS MONTANENSIS Meek	723
<div style="display: flex; justify-content: space-between;"> 5. The type specimen. (National Museum at Washington.) </div>	
PLATYCRINUS HALLI Shumard	662
<div style="display: flex; justify-content: space-between;"> 6a. Specimen with arms and stem. (Coll. W. and Sp.) </div>	
<div style="display: flex; justify-content: space-between;"> 6b. Portion of an arm, enlarged. </div>	
<div style="display: flex; justify-content: space-between;"> 7a. Posterior side of the calyx. (Same collection.) </div>	
<div style="display: flex; justify-content: space-between;"> 7b. Ventral aspect of the same specimen. </div>	
PLATYCRINUS BOONVILLENSIS S. A. Miller	681
<div style="display: flex; justify-content: space-between;"> 8a. The type specimen, showing the dorsal cup. (After Miller.) </div>	
<div style="display: flex; justify-content: space-between;"> 8b. Dorsal aspect of the base. (Coll. W. and Sp.) </div>	
<div style="display: flex; justify-content: space-between;"> 9. Another specimen. (Coll. F. A. Sampson.) </div>	
PLATYCRINUS ORNIGRANULUS McCh.	701
<div style="display: flex; justify-content: space-between;"> 10. Basal disk, showing the ornamentation. </div>	
MARSUPIOCRINUS PRÆMATURUS (Hall and Whitf.).	734
<div style="display: flex; justify-content: space-between;"> 11a. Side view of the type specimen. </div>	
<div style="display: flex; justify-content: space-between;"> 11b. Dorsal aspect of the same. (After Hall and Whitfield.) </div>	

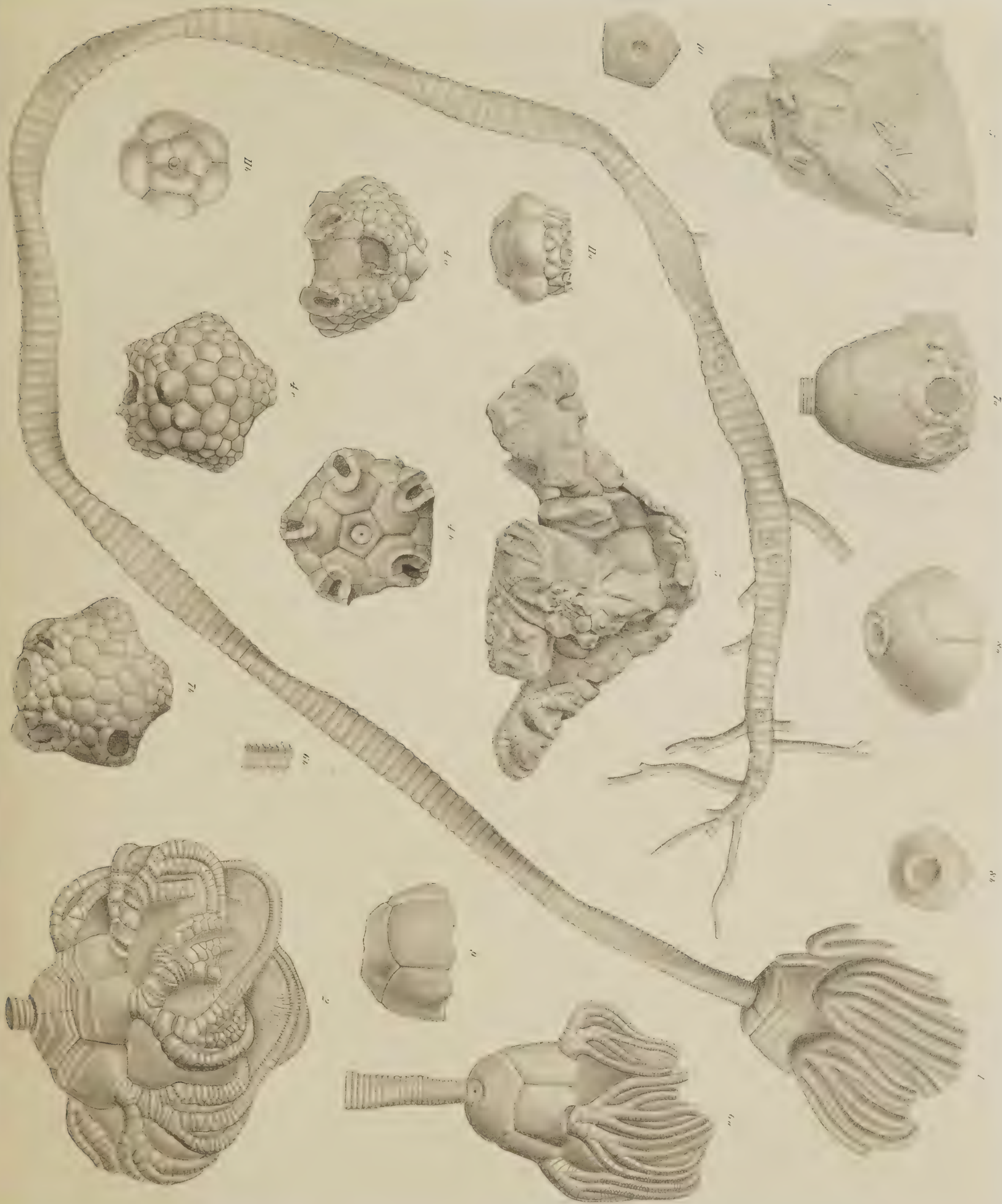


PLATE LXXIII.

	PAGE
EUCLADOCRINUS MILLEBRACHIATUS W. and Sp.	720
Fig. 1. A large specimen; the tubular appendages hanging over the calyx.	
EUCLADOCRINUS MILLEBRACHIATUS, var. IMMATURUS W. and Sp. . .	722
2. Dorsal view of a small specimen; the tubular appendages directed horizontally.	
3. Ventral aspect of a larger specimen, showing the bases of the arms.	
EUCLADOCRINUS PLEUROVIMINEUS (White)	724
4. A large specimen, showing the dorsal side of the calyx.	
EUCLADOCRINUS PRÆNUNTIUS W. and Sp.	726
5. One of the type specimens, showing calyx and portions of the arms.	
PLATYCRINUS HUNTSVILLE (Troost) W. and Sp.	678
6. A large specimen with inflated arms; the plates of the calyx not ornamented.	
7a. Another mature specimen with ornamented calyx plates, the arms gradually tapering.	
7b. A portion of one ray enlarged, showing the spinous processes at the sides of the arm plates, the waving suture lines between the lower brachials, and the arrangement of the pinnules ($\frac{1}{2}$).	
8b. An immature specimen; the arms uniserial to nearly one half of their length ($\frac{1}{2}$).	
9. A more mature specimen ($\frac{1}{2}$).	
10. A very young specimen, the arms composed of comparatively elongate plates, and uniserial almost to their tips ($\frac{3}{4}$).	
11. The base of a highly ornamented specimen.	
12. The base of a smooth specimen.	

(All the specimens in the collection of Wachsmuth and Springer.)

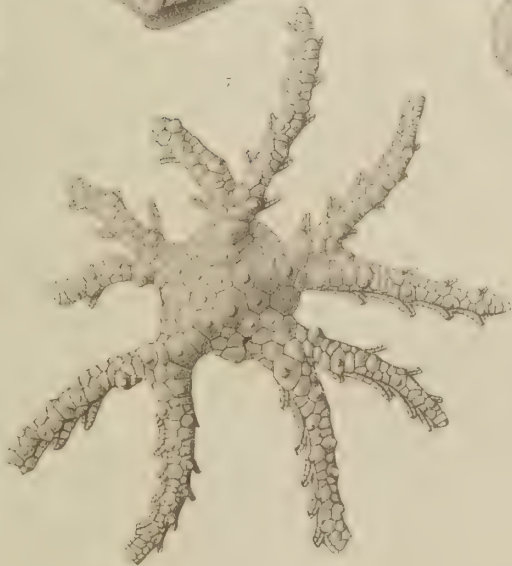
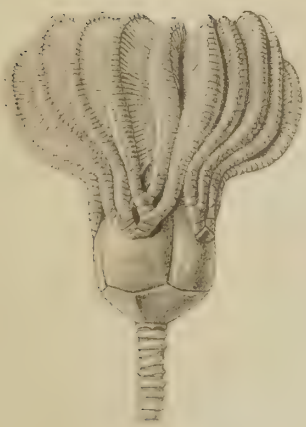
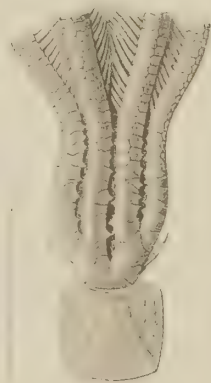
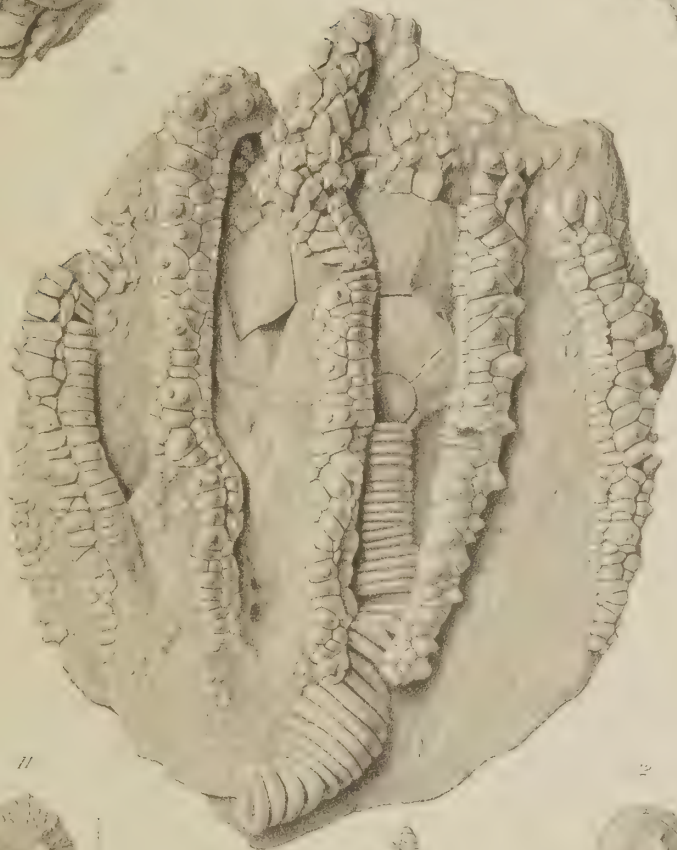
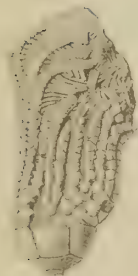
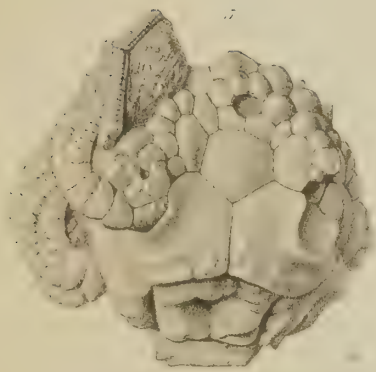


PLATE LXXIV.

	PAGE
<i>EUCLADOCRINUS PLEUROVIMINEUS</i> (White)	724
Fig. 1. A magnificent specimen, showing the calyx, the tubular appendages, arms, and column.	
<i>EUCLADOCRINUS MILLEBRACHIATUS</i> W. and Sp.	720
2. A moderately large specimen, showing the dorsal side of the calyx, tubular appendages, and arms.	
3. Side view of the calyx.	
4. Ventral aspect of a fine specimen, showing the rigid covering pieces of the tubular appendages, and the ventral furrows along the arms.	
5. Lateral view of one of the tubular appendages, showing the arm openings, and the respiratory pores at the base of the arms.	
6. Cross section of an appendage, showing the central cavity.	
7. The appendage with the covering pieces removed.	
8. Distal face of a stem joint from near the calyx, showing the transverse ridge, and the minute axial canal.	
9. Portion of an arm enlarged, showing the pinnules.	

(All the specimens in the collection of Wachsmuth and Springer.)

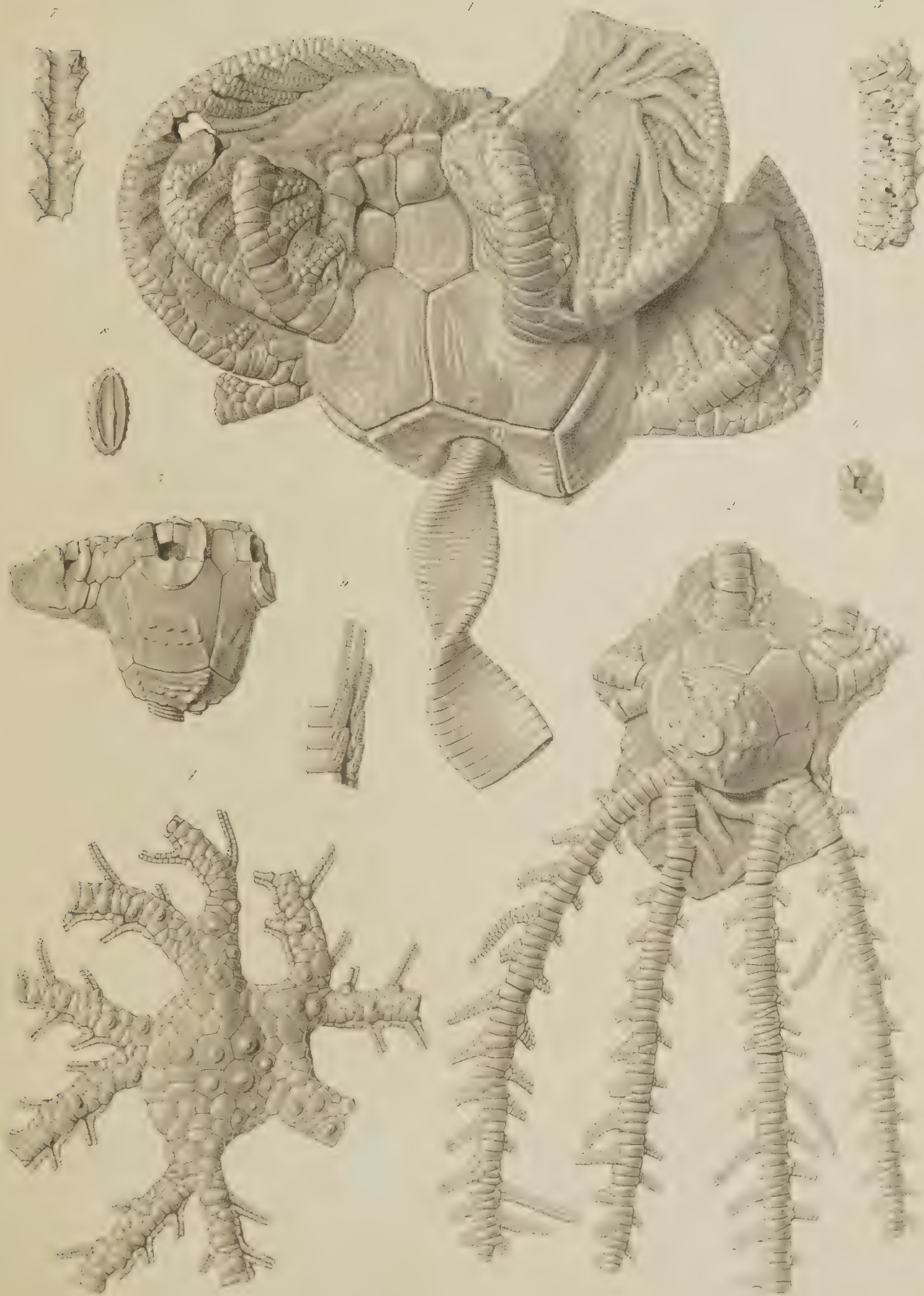




PLATE LXXV.

	PAGE
CAMPTOCRINUS MYELODACTYLUS W. and Sp.	779
Fig. 1. A specimen with stem and cirri. (Coll. W. and Sp.)	
2 <i>a</i> and <i>b</i> . Portions of the coiled stem in different specimens, showing the cirri.	
DICHOCCRINUS BLAIRI S. A. Miller	778
3. The type specimen. (After Miller.)	
DICHOCCRINUS HUNTSVILLÆ W. and Sp.	773
4. The type specimen. (Coll. W. and Sp.)	
DICHOCCRINUS CINCTUS S. A. MILLER	764
5. Specimen with arms. (Same collection.)	
DICHOCCRINUS CONUS Meek and Worthen	770
6. The type specimen. (Illinois State collection.)	
PLATYCCRINUS CANALICULATUS Hall.	689
7 <i>a</i> . Specimen with arms. (Coll. W. and Sp.)	
7 <i>b</i> . Dorsal aspect of the calyx. (Same collection.)	
PLATYCCRINUS SCULPTUS Hall	691
8. A large specimen with arms. (Same collection.)	
9. A smaller specimen. (Mus. Comp. Zool.)	
PLATYCCRINUS AMERICANUS O. and Sh.	686
10. A mature specimen with arms; the latter biserial from above the last bifurcation. (Coll. W. and Sp.)	
11. A young specimen; the arms uniserial and zigzag, the joints elongate, and the pinnules far apart. (Same collection.)	
12. Dorsal aspect of the calyx. (Same collection.)	
13 <i>a</i> . Side view of the calyx of a large specimen. (Same collection.)	
13 <i>b</i> . Anal side of the same specimen.	
13 <i>c</i> . Ventral aspect of the same.	
14. Natural cast, probably of CULICOCRINUS	735
From the Niagara group of Iowa. (Same collection.)	

	PAGE
COCOCRINUS BACCA F. Roemer	739
Fig. 15 <i>a</i> . Dorsal aspect of the calyx (drawn with the anal interradius at the lower left side).	
15 <i>b</i> . Right anterior side of the same specimen.	
15 <i>c</i> . Posterior side of same. (Same collection.)	
MARSUPIOCRINUS TENNESSEENSIS (F. Roemer)	731
16 <i>a</i> . Dorsal view of the calyx. (Coll. W. and Sp.)	
16 <i>b</i> . Ventral aspect of the same specimen.	
MARSUPIOCRINUS STRIATUS W. and Sp.	732
17. Dorsal view of a rather small specimen. (Same collection.)	
18. Ventral aspect of another specimen.	
MARSUPIOCRINUS TENTACULATUS (Hall)	733
19 <i>a</i> . The type specimen. (After Hall.)	
19 <i>b</i> . Enlargement of one of its rays. (After Hall.)	
CORDYLOCRINUS PLUMOSUS (Hall)	737
20. The type specimen. (After Hall.)	

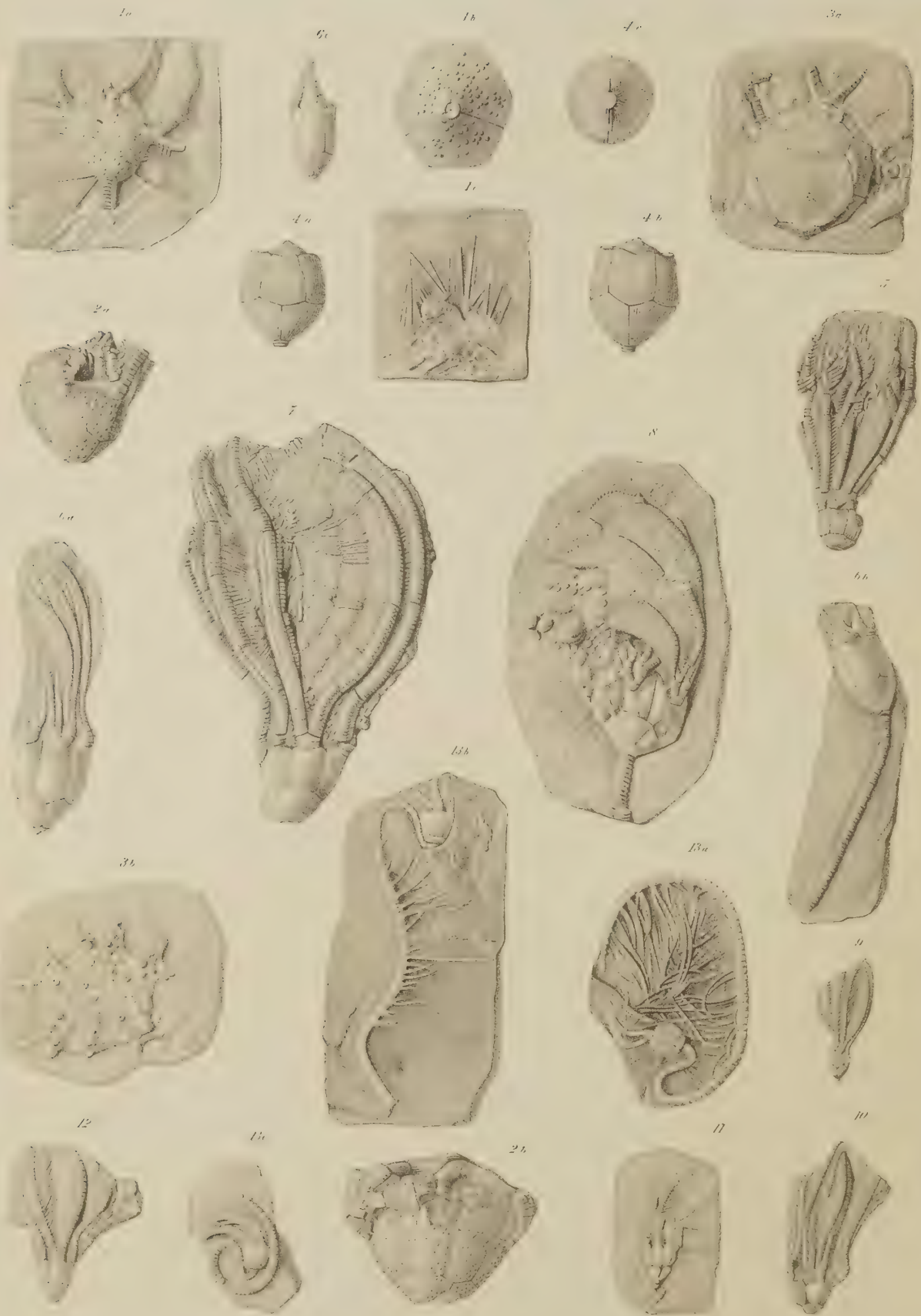


PLATE LXXVI.

	PAGE
ARTHRACANTHA ITHACENSIS Williams	749
Fig. 1 <i>a</i> . Lateral view of a specimen with arms. (Museum Cornell University.)	
1 <i>b</i> . Basal disk.	
1 <i>c</i> . The movable spines upon the tegmen.	
ARTHRACANTHA PUNCTOBRACHIATA Williams	750
2 <i>a</i> . Specimen showing spine bases. (Coll. W. and Sp.)	
2 <i>b</i> . Another specimen with some spines attached. (Coll. Prof. S. Calvin.)	
ARTHRACANTHA DEPRESSA W. and Sp.	751
3 <i>a</i> . Dorsal aspect of the type specimen. (Coll. W. and Sp.)	
3 <i>b</i> . Ventral aspect of the same specimen.	
DICHOCHRINUS LINEATUS Meek and Worthen	761
4 <i>a</i> . The type specimen; posterior view of the calyx. (Mus. Comp. Zoöl.)	
4 <i>b</i> . Anterior view of the same specimen.	
4 <i>c</i> . Dorsal aspect of same.	
DICHOCHRINUS PISUM Meek and Worthen	763
5. Specimen with arms. (Mus. Comp. Zoöl.)	
DICHOCHRINUS CRASSITESTUS White	769
6 <i>a</i> . The type specimen; the anterior side exposed. (Same collection.)	
6 <i>b</i> . Another specimen with part of the column attached. (Coll. W. and Sp.)	
6 <i>c</i> . Posterior view of the calyx and anal tube. (Same collection.)	
DICHOCHRINUS OVATUS Owen and Shumard	760
7. A fine specimen with arms. (Mus. Comp. Zoöl.)	
DICHOCHRINUS LIRATUS Hall	759
8. Specimen with arms and part of column. (Same collection.)	
DICHOCHRINUS COXANUS Worthen	763
9. The type specimen. (Coll. L. A. Cox.)	
DICHOCHRINUS HAMILTONENSIS Worthen	772
10. The type specimen. (Same collection.)	

	PAGE
DICHOCRINUS ANGUSTUS White	768
Fig. 11. Posterior view of a specimen with arms. (Coll. W. and Sp.)	
DICHOCRINUS SUPERSTES W. and Sp.	766
12. Side view of the type specimen. (Same collection.)	
CAMPTOCRINUS CIRRIFER W. and Sp.	780
13a. The type specimen, showing the curved cirrus-bearing stem; from the Kaskaskia group of Kentucky. (Coll. W. and Sp.)	
13b. Another specimen from the Kaskaskia group. (Same collection.)	
13c. A specimen from the St. Louis group of Huntsville, Ala. (Same collection.)	



PLATE LXXVII.

	PAGE
DICHOCRINUS POLYDACTYLUS Cass. and Lyon	756
1 <i>a</i> . A large specimen with arms.	
1 <i>b</i> . Posterior view of calyx, showing the elevated dome and disk ambulacra.	
DICHOCRINUS LACHRYMOSUS Hall	754
2 <i>a</i> . Specimen with arms and stem.	
2 <i>b</i> . Posterior view of calyx.	
2 <i>c</i> . Ventral aspect of same.	
DICHOCRINUS LIRATUS Hall	759
3 <i>a</i> . Specimen showing the arms and stem.	
3 <i>b</i> . Posterior view of the dorsal cup.	
DICHOCRINUS CINCTUS Miller and Gurley	764
4 <i>a</i> . Posterior view of specimen with arms.	
4 <i>b</i> . Ventral aspect of the calyx.	
4 <i>c</i> . Distal face of first distichal (†).	
DICHOCRINUS PLICATUS Hall	758
5 <i>a</i> . A small specimen with arms and stem.	
5 <i>b</i> . Another specimen, giving a side view of the dorsal cup.	
DICHOCRINUS ORNATUS W. and Sp.	762
6. Specimen with arms and stem, from near Mt. Pleasant, Iowa.	
DICHOCRINUS LEVIS Hall	765
7 <i>a</i> . Specimen with arms. (Coll. Mr. Fultz of Burlington.)	
7 <i>b</i> . Another specimen. (Same collection.)	
7 <i>c</i> . Portion of an arm with pinnules (enlarged).	
DICHOCRINUS OVATUS O. and Sh.	760
8 <i>a</i> . A specimen with arms.	
8 <i>b</i> . Posterior view of the dorsal cup.	
DICHOCRINUS OBLONGUS W. and Sp.	759
9. Posterior view of the type specimen.	

	PAGE
DICHOCHRINUS PISUM M. and W.	763
Fig. 10. Posterior side of the dorsal cup. (After Meek and Worthen.)	
DICHOCHRINUS STRIATUS O. and Sh.	757
11 <i>a</i> . Posterior side of the dorsal cup.	
11 <i>b</i> . Side view of another specimen.	
DICHOCHRINUS INORNATUS W. and Sp.	770
12 <i>a</i> . Posterior view of a specimen with arms.	
12 <i>b</i> . Another specimen.	
DICHOCHRINUS DELICATUS W. and Sp.	766
13. The type specimen.	
(All the specimens, except 7 <i>a</i> , <i>b</i> and 10, are in the collection of Wachsmuth and Springer.)	

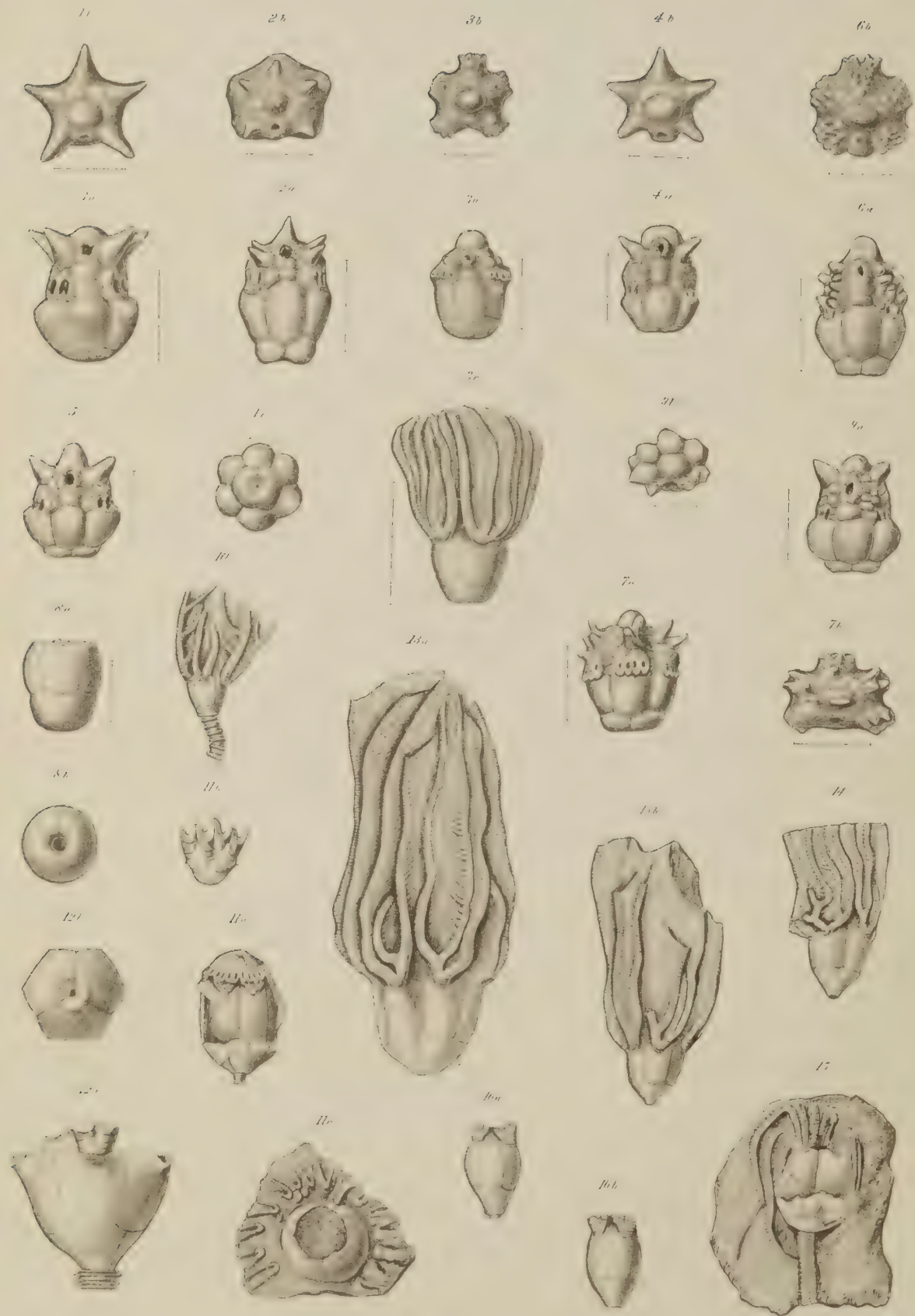


PLATE LXXVIII.

	PAGE
TALAROCRINUS SEXLOBATUS (Shumard)	784
Fig. 1 <i>a</i> . Posterior view of a specimen from Flagpont, Va. ($\frac{1}{1}$ ⁵). (Coll. W. and Sp.)	
1 <i>b</i> . Ventral aspect of the same specimen ($\frac{1}{1}$ ⁵).	
1 <i>c</i> . Dorsal view of the calyx. (Coll. W. and Sp.)	
TALAROCRINUS OVATUS Worthen	787
2 <i>a</i> . Posterior view of the type specimen ($\frac{1}{1}$ ⁵). (Illinois St. Coll.)	
2 <i>b</i> . Ventral aspect of the same specimen ($\frac{1}{1}$ ⁵).	
TALAROCRINUS DECORNIS W. and Sp.	788
3 <i>a</i> . Posterior view of the type specimen ($\frac{1}{1}$ ⁵). (Coll. W. and Sp.)	
3 <i>b</i> . Ventral aspect of the same ($\frac{1}{1}$ ⁵).	
3 <i>c</i> . Specimen with arms ($\frac{1}{1}$ ⁵). (Same collection.)	
TALAROCRINUS SYMMETRICUS (Cass. and Lyon)	786
4 <i>a</i> . Posterior view of the calyx ($\frac{1}{1}$ ⁵). (Coll. W. and Sp.)	
4 <i>b</i> . Ventral aspect of the same specimen ($\frac{1}{1}$ ⁵).	
5. Posterior view of type ($\frac{1}{1}$ ⁵). (Coll. S. S. Lyon.)	
TALAROCRINUS CORNIGERUS (Shumard)	783
6 <i>a</i> . Posterior view of a specimen from Pulaski Co., Ky. (Coll. W. and Sp.)	
6 <i>b</i> . Ventral aspect of the same specimen ($\frac{1}{1}$ ⁵).	
7 <i>a</i> . Anterior view of the type specimen, from Alabama ($\frac{1}{1}$ ⁵). (Mus. Washington University, St. Louis.)	
7 <i>b</i> . Ventral aspect of the same ($\frac{1}{1}$ ⁵).	
TALAROCRINUS SIMPLEX (Shumard)	790
8 <i>a</i> . Anterior view of the dorsal cup ($\frac{1}{1}$ ⁵). (Coll. W. and Sp.)	
8 <i>b</i> . Dorsal aspect of a larger specimen. (Same collection.)	
TALAROCRINUS sp. (?)	
9 <i>a</i> . Posterior view of a specimen from Pulaski Co., Ky. ($\frac{1}{1}$ ⁵). Perhaps an abnormal specimen of <i>T. sexlobatus</i> . (Coll. W. and Sp.)	
9 <i>b</i> . Oral plates of the same ($\frac{1}{1}$ ⁵).	
HEXACRINUS OCCIDENTALIS W. and Sp.	745
10. Anterior view of the type specimen. (Mus. Davenport Acad. Nat. Sci.)	

	PAGE
DICHOCRINUS PENTALOBUS (Cass. and Lyon)	775
Fig. 11 <i>a</i> . Lateral view of the type specimen; somewhat crushed. (Coll. S. S. Lyon.)	
11 <i>b</i> . The fixed brachials, enlarged (×).	
11 <i>c</i> . An imperfect specimen, showing parts of the pendant arms. (Coll. S. S. Lyon.)	
HEXACRINUS LEAI (Lyon)	746
12 <i>a</i> . Anterior view of type; the lower brachials and a few joints of the stem restored from another specimen. (Coll. S. S. Lyon.)	
12 <i>b</i> . Basal cup of same specimen.	
DICHOCRINUS SCITULUS Hall	767
13 <i>a</i> . Side view of a large specimen with arms, from the Lower Burlington limestone. (Coll. W. and Sp.)	
13 <i>b</i> . A small specimen from the Upper Burlington limestone. (Same collection.)	
14. Side view of a specimen with arms from the same horizon. (Same collection.)	
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15. Specimen with pendent arms from the Upper Burlington limestone. (Coll. W. and Sp.).	
DICHOCRINUS FICUS Cass. and Lyon	774
16 <i>a</i> . Posterior view of the calyx. (Coll. W. and Sp.)	
16 <i>b</i> . Side view of another specimen. (Same collection.)	



PLATE LXXIX.

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TALAROCRINUS SUBGLOBOSUS W. and Sp.	789
Fig. 1 <i>a</i> . Posterior view of the calyx. (Coll. W. and Sp.)	
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2 <i>c</i> . Dorsal aspect of the calyx. (Same collection.)	
2 <i>d</i> . Another type specimen, showing the wings in position. (Coll. S. S. Lyon.)	
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PTEROTOCRINUS ACUTUS Wetherby	799
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3 <i>d</i> . Another specimen, showing the wings in a side view. (Same collection.)	
3 <i>e</i> . Dorsal aspect of a fine specimen with arms and wings. (Same collection.)	
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5 <i>a</i> . One of the type specimens; lateral aspect. (After Meek and Worthen.)	
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7 <i>b</i> . Side view of the same; the dorsal cup not preserved.	

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PTEROTOCRINUS CRASSUS Meek and Worthen	801
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PTEROTOCRINUS ACUTUS, var. BIFURCATUS Wetherby	801
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PLATE LXXX.

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3.	The lower part of the dorsal cup; from Pulaski Co., Ky. (Coll. W. and Sp.)	
	ACROCRINUS AMPHORA W. and Sp.	808
4.	A large specimen with portions of the arms and stem.	
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6.	The calyx somewhat flattened and enlarged ($\frac{1}{2}$). The right posterior ray forming the median line of figure; the anal inter-radius occupying the left side.	
7.	Another specimen showing calyx and lower part of the arms ($\frac{1}{2}$).	
8.	Ventral aspect of a large specimen ($\frac{1}{2}$).	
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	(All in the collection of W. and Sp.)	
	ACROCRINUS WORTHENI Wachsmuth	807
10a.	Diagram made from the type specimen in the Illinois State Museum.	
10b.	Showing the outlines of the specimen.	

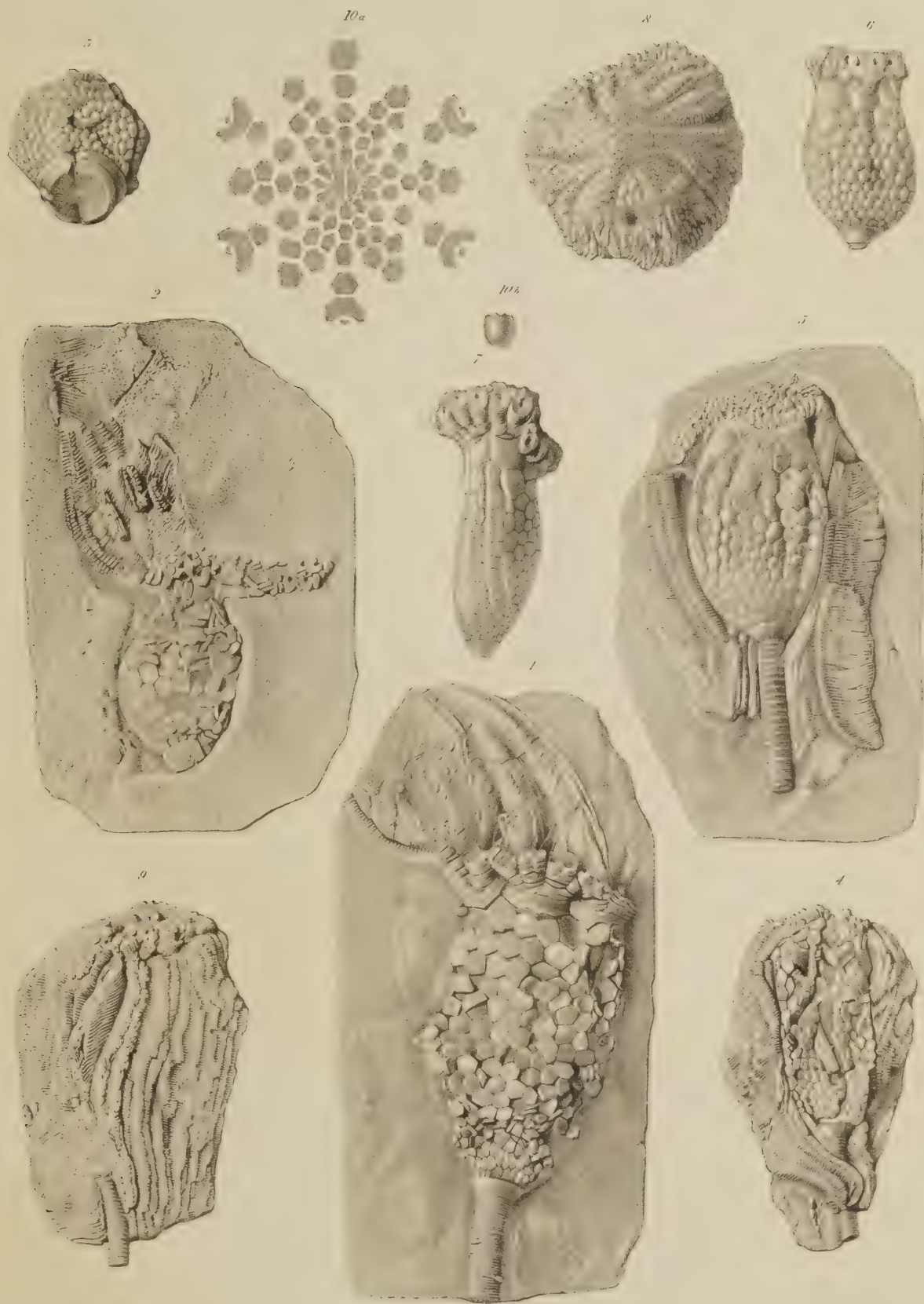


PLATE LXXXI.

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Fig. 1.	A very large specimen with arms. (Coll. W. and Sp.)	
2.	A smaller specimen with arms. (Same collection.)	
3.	Calyx with arms removed, leaving the partitions enclosing the arms. (Same collection.)	
4.	A specimen with an unusually broad base. (Same collection.)	
5.	Ventral view of calyx with arms and partitions removed, showing the places for the attachment of the arms. (Same collection.)	
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15.	One of the plates of the third ring, enlarged.	
	EUCALYPTOCRINUS ELRODI S. A. Miller	339
7a.	A perfect specimen with arms, from Waldron, Ind. (Mus. Comp. Zoöl.)	
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12.	The plates constituting the ventral disk. Those forming the two lower rings showing the inner floor, those of the two upper the outer surface. (After Hall.)	
13.	Inner floor of basals and radials. (After Hall.)	

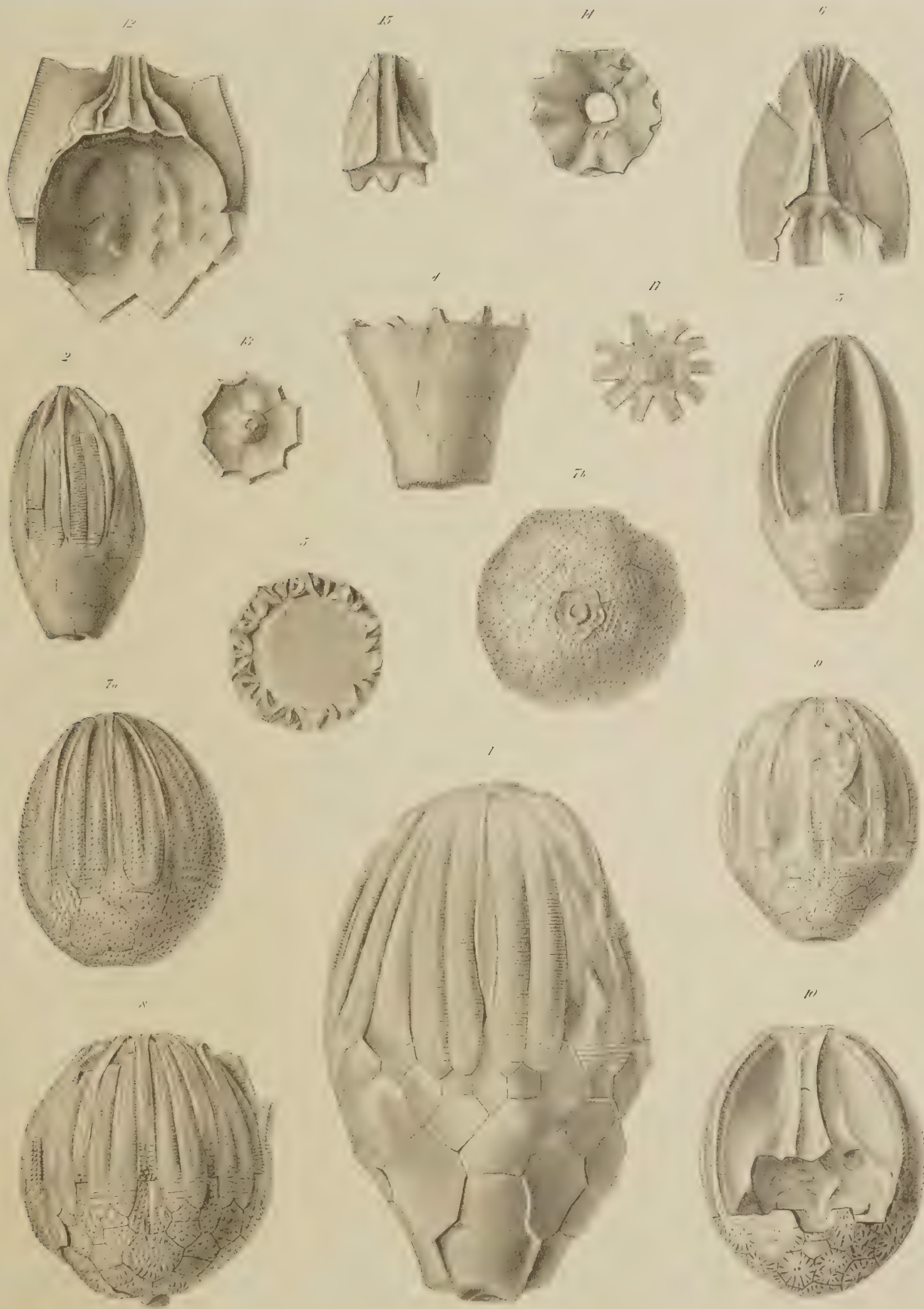


PLATE LXXXII.

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Fig. 1. Stem and root. (Coll. W. and Sp.)	
2. Specimen with arms and part of stem. (Same collection.)	
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EUCALYPTOCRINUS ORNATUS Hall	340
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11. Internal cast of the calyx. (Coll. W. and Sp.)	
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EUCALYPTOCRINUS DECORUS Phillips.	
15. A specimen from Dudley, England. (Coll. W. and Sp.)	
Figured for comparison with <i>E. decorus</i> Hall.	

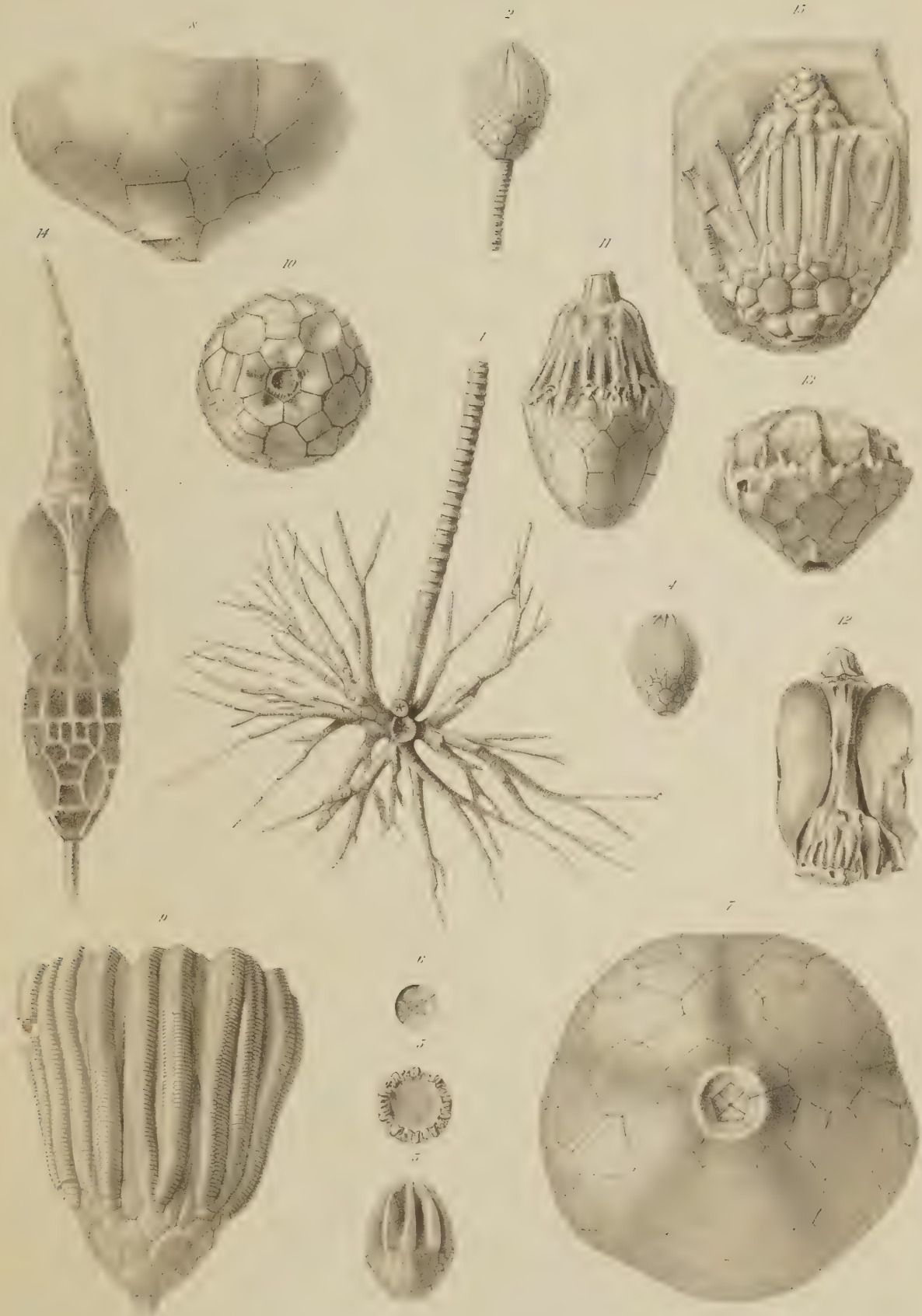
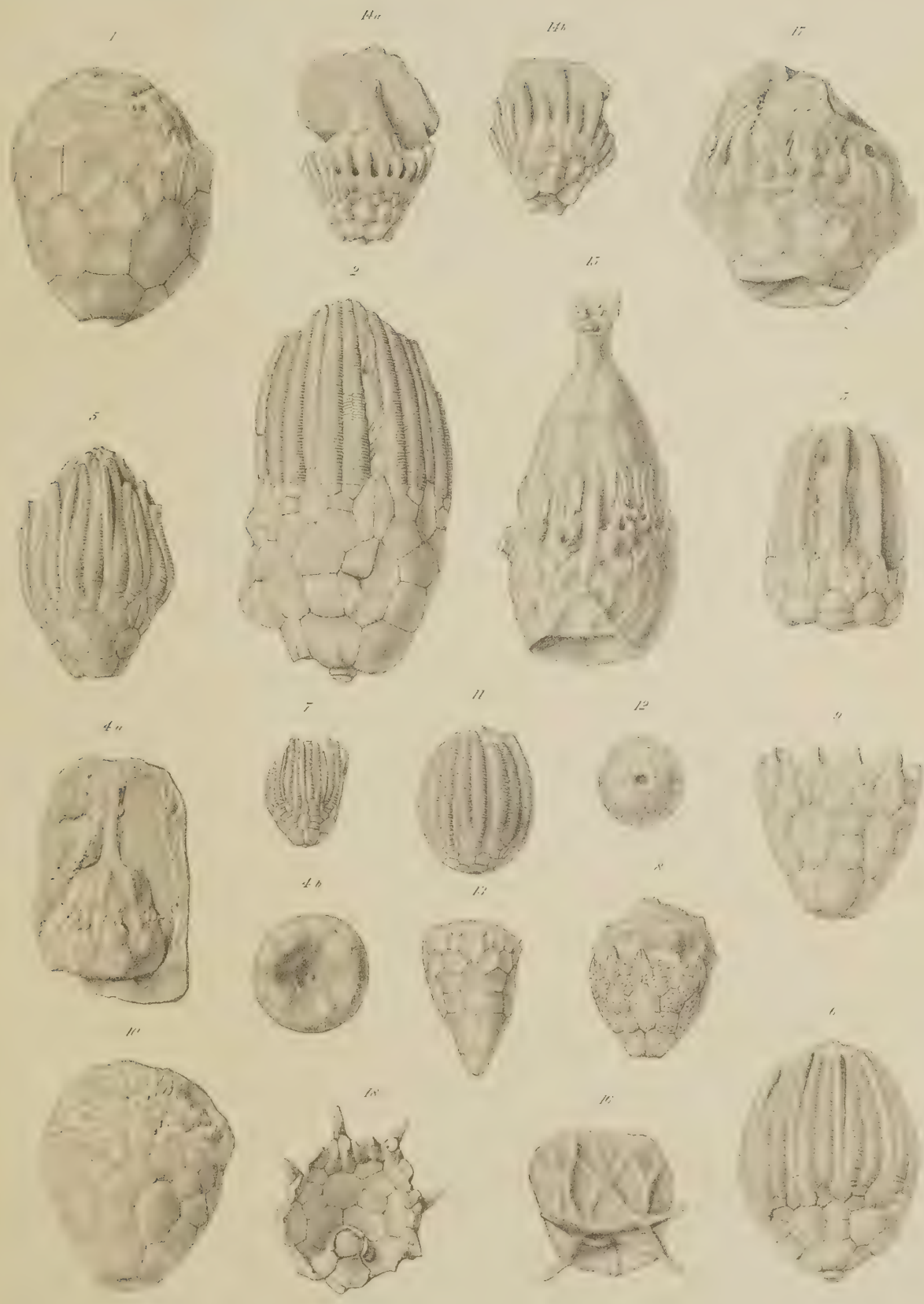


PLATE LXXXIII.

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EUCALYPTOCRINUS INCONSPICUUS Ringueberg	346
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5. A plump specimen from Rochester. (Coll. W. and Sp.)	
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8. One of the type specimens. (Mus. Comp. Zool.)	
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EUCALYPTOCRINUS VENTRICOSUS W. and Sp.	341
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15. Natural cast of the calyx. (Coll. Thomas A. Greene.)	
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18. Inner aspect of the dorsal cup; the type specimen. (Coll. Dr. Ringueberg.)	



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